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THE EFFECT OF TELEPHONE FOLLOW-UP ON MATERNAL CONCERNS AND CONFIDENCE AFTER EARLY HOSPITAL DISCHARGE

BY

JUDITH ANNE HAYNES ©

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF NURSING

FACULTY OF NURSING

EDMONTON, ALBERTA

FALL, 1995.

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled THE EFFECT OF TELEPHONE FOLLOW-UP ON MATERNAL CONCERNS AND CONFIDENCE AFTER EARLY HOSPITAL DISCHARGE submitted by JUDITH ANNE HAYNES in partial fulfillment of the requirements for the degree of MASTER OF NURSING.

Peggy Anne Field
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Iris E. Campbell
Professor I. Campbell

Dr T. Maguire

Date: 2 October 1995.

ABSTRACT

THE EFFECT OF TELEPHONE FOLLOW-UP ON MATERNAL CONCERNS AND CONFIDENCE AFTER EARLY HOSPITAL DISCHARGE.

This randomized, controlled prospective study followed a convenience sample of 99 primiparous mothers for six weeks after early hospital discharge. Daily telephone follow-up by a nurse for 50 subjects in the experimental group for the first week after discharge was examined to see what effect it had on mothers' concerns, information sought, sources of information, overall maternal self-confidence, and confidence in infant care ability. Bandura's model of self-efficacy was used as the theoretical model for the study. A 2 X 3 factorial research design was used based on a mixed model representing a combination of within subjects and between groups design, with the factors time and group. Measurement occurred at three time periods: prior to early hospital discharge; two weeks after hospital discharge; and six weeks after hospital discharge. Several measurement instruments were used. The Maternal Concerns Scale was used to measure mothers' degree of concerns on self care, baby, and personal and family adjustment dependent variables, information sought about the concerns and the sources of that information. The Overall Maternal Confidence Scale measured the degree of overall maternal self-confidence, and the Confidence in Infant Care Scale measured the mother's confidence in providing care for her baby. A telephone interview sheet was used to guide the telephone interviews and record data. Demographic & biographic data was collected at each time period. Repeated measures analysis of variance and Chi square were used to analyze findings.

None of the hypotheses were accepted. Although telephone follow-up after early discharge did not make a significant difference to mothers' concerns and confidence, there was a tendency for mothers in the

experimental group to have more but less intense concerns than mothers in the control group. They also showed consistently higher scores on overall maternal self-confidence and confidence in infant care than control group mothers. Mothers sought a lot of information about their concerns, and used nurses most frequently as sources of information. The telephone calls were well received by mothers in the experimental group.

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CHAPTER 1

THE RESEARCH PROBLEM

Introduction

The birth of a first child is a stressful event which results in monumental changes for the new mother in the early weeks after birth (Rubin, 1975). The postpartum period has been described as one of the most difficult times in a woman's life (Sumner & Fritsch, 1977). The new mother is faced with enormous demands and multiple concerns while she is still emotionally and physically exhausted from childbirth, and may be suffering from physical complications as a result of the birth (Gruis, 1977; Jansson, 1985; Hampson, 1989; Rubin; Sadler, 1989; Walker, Crain, & Thompson, 1986). Early discharge from hospital after childbirth has resulted in reduced time for the new mother to receive nursing support and teaching in the hospital. Discharge occurs at a time when she requires a great deal of support and teaching for infant care and feeding, and for developing a healthy relationship with her infant (McKenzie, Canaday, & Carroll, 1982; Mercer, 1986). Nursing care following discharge may be limited, and she may lack resources for help and information to assist her to become competent in caring for her baby, and to develop self-confidence in her mothering role (Flager, 1988; Mercer, 1981; Rovers & Fuller, 1986). Her self-confidence can also be affected by the concerns she has, and problems she experiences (Entwisle & Doering, 1981). Concerns of new mothers in the early postpartum are commonly related to three areas: self care, infant care, and personal and family adjustment (Gruis; Harrison & Hicks, 1983; Rovers & Isenor, 1986). For most mothers, these concerns provide the impetus for them to make the necessary adjustments to mothering (Rubin, 1975), but for some they can become overwhelming (Alder, 1984; Gruis; Rickitt, 1987; Affonso, 1987).

Continuing nursing follow up after early hospital discharge is needed to support the mother so that she feels that she can cope with the transition to motherhood (Rickitt). Nursing support provides information, reassurance and encouragement, which help to reduce the mother's concerns and increase her confidence in being able to care for her baby. One way of providing this support is through telephone follow up. Primiparae are more susceptible to influence by health care providers than multiparae, as coping mechanisms devised in the first pregnancy are likely to be utilized in later pregnancies. It is important to provide quality nursing intervention for first time mothers in view of the potential long-term effects (Rhode & Groenjes-Finke, 1980). Lack of follow- up after discharge can result in long term maternal and infant problems (Donaldson, 1981). Formal nurse-initiated telephone follow up for the new mother at home has not been extensively used in community health programs. It can be a cost-effective alternative to home visits, providing for consistent and prolonged follow up of the new mother at home (Wasson & Gaudette, 1992).

Rationale for the study

The impetus for this study came from the researcher's experience in a student clinical assignment where new mothers and babies were followed at home after early hospital discharge. During these clinical sessions it was evident that some new mothers felt isolated and lacked the resources for support and information after discharge from hospital. Their needs were often not apparent within the 24 hours after discharge when they were visited at home by a nurse from the Local Board of Health. During weekly visits to one new mother, it became apparent how much the mother appreciated the support and information provided by the researcher. This mother's experience prompted the researcher to wonder how consistent and sustained contact with a new mother after early hospital discharge would ease the transition to motherhood.

Background to the study

This study took place at a large teaching hospital in Western Canada. It was carried out when extensive health care changes were being undertaken by the Provincial Government as a way to reduce health care costs. At the time the focus of health care services was changing from hospital based acute care to early hospital discharge with home follow up. As planning for the study was underway, new mothers and babies were being discharged from the hospital approximately 48 hours after birth with no nursing follow up except for a public health nurse visit between seven and ten days after discharge. However, two sources of help were available if needed. The telephone number for a 'warm line' to the postpartum unit was given to each mother on discharge. She was invited to call if she had any questions or needed advice to solve a problem. This line was heavily used (B. Hoskins, personal communication, Feb. 6th, 1993). In addition, a Lactation Consultant was on call during the day for the Breast Feeding Clinic which was located on the postpartum unit. Mothers could talk to the consultant by phone, or could make an appointment to come into the clinic for help with breastfeeding problems.

As data collection for the study commenced, home follow up nursing services to new mothers after discharge from the hospital commenced. A nurse from the early discharge follow up program run by the Local Board of Health telephoned each mother the day of discharge, and made a home visit the next day. Some mothers received more than one visit if there were concerns that needed to be followed. Telephone calls could also be made to the mothers to provide ongoing support or to check on problems and concerns. A telephone hot line was also available to the mothers through this program.

They could access a nurse for questions or problems from 0800 hours till 2200 hours. The postpartum unit's warmline was still available between 2200 hours and 0800 hours. A further change occurred approximately seven weeks after the start of data collection, when the mandatory discharge time for new mothers and babies with no major complications was reduced from 48 hours to 12 - 36 hours after birth. Follow-up by the Community Health Nurse continued with one home visit the day after discharge, and more visits or telephone calls being made if necessary. However, a record was not obtained of the number of visits or telephone calls made by the Community Health Nurse to mothers in the experimental or control groups.

Purpose

The purpose of the study was to find out if daily telephone follow-up by a nurse in the first week after early maternity discharge makes a difference to a new mother's number and intensity of concerns, information sought, sources of information, maternal self-confidence, and her confidence in infant care ability.

Research question

What effect does daily telephone follow-up by a nurse after early maternity hospital discharge have on the new mother's concerns, information sought, sources of information, overall maternal self-confidence, and confidence in infant care ability?

Hypotheses

Hypothesis #1

New mothers who are telephoned daily by a nurse after early hospital discharge will have fewer concerns than will control group mothers

Hypothesis #2

New mothers who are telephoned daily by a nurse after early hospital discharge will have less intense concerns than will control group mothers

Hypothesis #3
New mothers who are telephoned daily by a nurse after early hospital discharge will seek less information than will control group mothers

Hypothesis #4
New mothers who are telephoned daily by a nurse after early hospital discharge will have more overall maternal self-confidence than will control group mothers

Hypothesis #5
New mothers who are telephoned daily by a nurse after early hospital discharge will have more confidence in their infant care ability than will control group mothers

Definition of terms

For the purpose of this study the following terms were defined :

Primipara: A woman delivering her first live baby. This may include women who have had previous abortions.

Concern: An uneasiness of mind or an anxious feeling the mother has because she is not sure what to do about a situation (Rovers, 1986).

Overall maternal self-confidence: A mother's general feeling of confidence in her overall mothering ability (Shea & Tronick, 1988).

Confidence in infant care: A feeling of certainty the mother has that she has all the information and skills she needs to easily care for her baby.

Early hospital discharge: Discharge from hospital within 48 hours of childbirth.

Telephone follow-up: A daily telephone call by the researcher for seven days after discharge from hospital to assess the progress of mother and infant, to answer questions, and to provide information and anticipatory guidance.

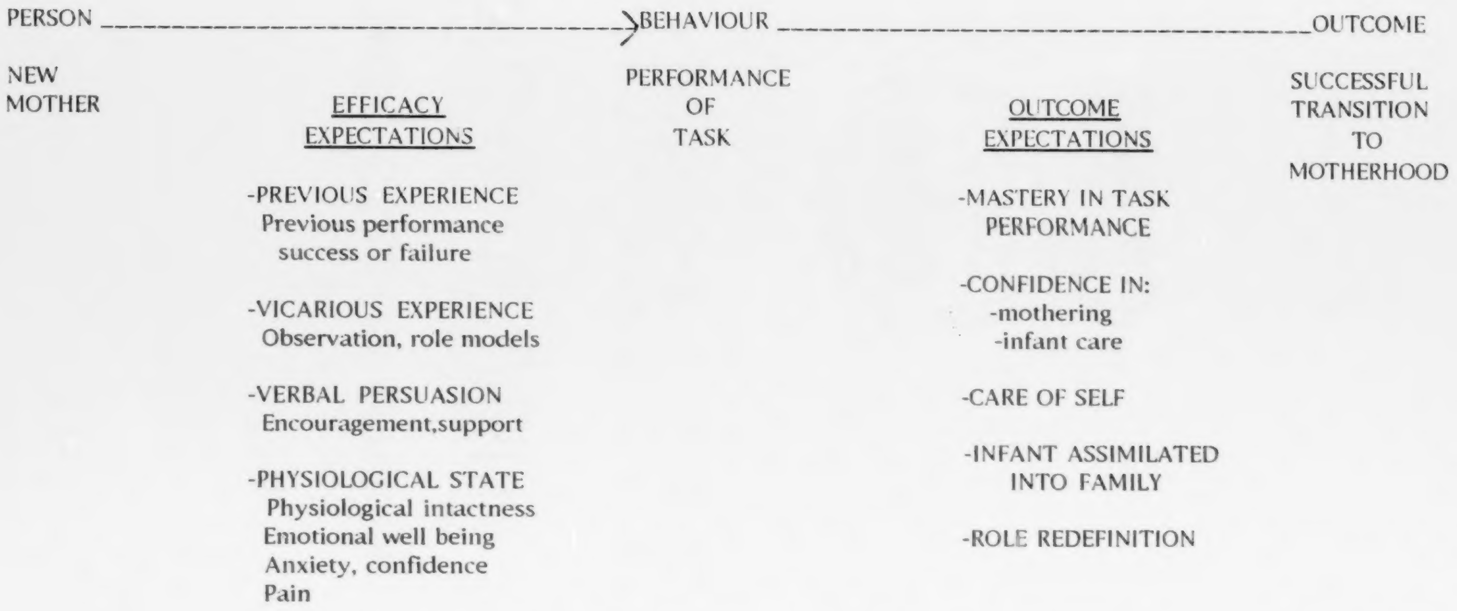
Theoretical Framework

Bandura's social learning theory of self-efficacy was used to guide this study (Bandura, 1977, 1982). The concept of self-efficacy is defined by Bandura as a person's judgement of how s/he can perform a task or manage a situation that contains novel, unpredictable or stressful elements. Self-efficacy is the mediating link between cognitive preparation (knowledge) and task performance (behavior). The performance of a task is a function of the expectations about one's ability to perform the task, and about the outcomes that will result from its performance (Bandura, 1982). There are two types of expectations involved in the performance of a task: efficacy expectations; and outcome expectations. Efficacy expectations are an individual's beliefs about how capable s/he is in performing the behavior, while outcome expectations are beliefs about whether a given behavior will lead to given outcomes. Knowledge, transformational operations, and component skills are necessary but insufficient for accomplishing the performance. What is needed also is the individual's perception of capability to perform the task, or self-efficacy, which can influence thought patterns, actions, and emotional arousal (Bandura, 1982). It is the individual's perception and not necessarily the "true" capability that influences the behavior (Strecher, McEvoy Devillis, Becker, & Rosenstock, 1986). Over time, mastery in performing a task leads to greater confidence. Confidence is assumed to influence the quality of a person's performance by serving as a mediating link between knowledge of how to complete a task and actual performance of the task (Bandura).

Efficacy expectations are learned from four major sources of information: previous performance attainment, vicarious experience, verbal persuasion, and physiological state (Bandura, 1988). Learning through personal experience is the strongest source of self-efficacy information. Success in performance heightens the perception of self-efficacy, while failure can lower it. Successive mastery over a task helps to develop and refine skills, and to develop coping mechanisms to deal with problems encountered (Strecher et al., 1986). Vicarious experiences can include observation of successful performance of the task by a role model. Verbal persuasion, encouragement and praise, can contribute to successful performance by increasing self-efficacy. A person's physiological state, including physical and emotional arousal, can also influence his/her perception of self-efficacy. Great anxiety can impair performance and reduce self-efficacy expectations (Bandura).

The new mother's vulnerability, and physical and emotional exhaustion after childbirth, can affect her feelings of adequacy to take care of her baby. Feelings of competence motivate her to perform the tasks required and enhance opportunities for her to receive positive feedback, thus increasing her confidence in her ability to care for her infant (Ballenski & Cook, 1982; Gorrie, 1984; Pridham, Lytton, Chang, & Rutledge, 1991). Multiparae have fewer concerns than primiparae, particularly about infant care (Bull, 1981; Gruis, 1977; Smith, 1989; Sumner & Fritsch, 1977), which suggests that prior experience with problems, and success in resolving them, prepares a mother for effective coping in similar situations (Rhode & Groenjes-Finke, 1980). Nursing interventions that focus on bolstering the mother's feelings of competency and confidence are important. Bandura's self-efficacy theory provides a way to view the early puerperium from a new mother's perspective, allowing for examination of factors that may influence her behavior in the transition to motherhood. The theoretical model as it applies to the new mother's experience of the postpartum period is depicted in Figure 1.

Figure 1 Model - Application of Bandura's Self-Efficacy Theory to the new mother's experience during the first six weeks after childbirth [1]



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[1] Adapted from Bandura, 1977, p.193

CHAPTER 2

LITERATURE REVIEW

An extensive search of past and current journal articles was undertaken using the CD Rom literature bases: Cinahl, from 1983 to 1995; Medline, from 1988 to 1995; and Psychlit from 1983 to 1995. Additional articles and books were accessed from these articles, and by hand searches through the shelves of the library. Articles, books, and theses were also accessed through interlibrary loan. Current books on the experience of new motherhood were read. As well, serendipitous findings provided by professors, colleagues, and friends are gratefully acknowledged. The review included literature and research related to seven areas: new motherhood; maternal concerns; maternal information needs and information seeking; mothers' sources of information and help; maternal confidence; early maternity hospital discharge; and nursing intervention by telephone follow-up.

New Motherhood

First time motherhood initially is a stressful state involving abrupt, irrevocable life changes (Leifer, 1980). It has been described by some researchers as a crisis (Dyer, 1963; Entwisle & Doering, 1981; Holmes & Rahe, 1967; LeMasters, 1957; Rickitt, 1987). The term 'crisis', however, implies a state of illness or abnormality with resolution being return to the normal state. To include new motherhood under this rubric suggests that it is a deviant state (Leifer). Other researchers prefer to describe the state of new motherhood as a transition, a developmental life change (Affonso, 1987; Brouse, 1988; Hobbs, 1965; Hobbs & Cole, 1975; Imle, 1990; Leifer; Mercer, 1981,1986; Miller & Sollie, 1980; Pridham & Chang, 1992; Roberts, 1983; Rossi, 1968; Rubin, 1961,1975,1985; Russell, 1974; Sheehan, 1981; Wandersman, Wandersman & Kahn, 1980). The transition to motherhood in North American society is difficult as there is inadequate preparation and training, a lack of realistic guidelines, and the tendency to romanticize it (Leifer; LeMasters; Rossi; Rubin, 1975). It has been extensively studied from a variety of perspectives: **maternal concerns** (Adams, 1963; Brown, 1967; Bull, 1981; Fillmore & Taylor, 1976; Gruis, 1977; Harrison & Hicks, 1983; Hiser, 1987; Pridham, Hansen, Bradley, & Heighway, 1982; Rovers & Fuller, 1986; Ruchala, 1991; Smith, 1989; Sumner & Fritsch, 1973; Tribotti, Lyons, Blackburn, Stein, & Withers, 1988); **adaptation** (Affonso, 1987; Curry, 1983; Hampson, 1989; Ruchala & Halstead, 1994; Sheehan; Shereshefsky & Yarrow, 1973); **role attainment** (Flager Virden, 1988; Mercer, 1981; Pridham et al., 1991; Walker et al., 1986); **identity** (Pickens, 1982; Pridham et al., 1991; Rubin, 1984; Walker et al.); **stressors and stressful events** (Affonso, 1987; Arizmendi & Affonso, 1987; Larsen, 1966; Pridham, Chang, & Hansen, 1987; Pridham, Egan, Chang, & Hansen, 1986); **psychological processes** (Leifer; Raphael-Leff, 1991; Shereshefsky & Yarrow, 1983); **meaning of the experience** (Bennett, 1981; Mercer, 1986; Pridham, 1987); and **self-efficacy** (Froman & Owen, 1990; Ruchala & Halstead, 1994).

The birth of the baby is considered to be the climax of pregnancy, and the puerperium is seen as anticlimactic, despite the fact that it involves monumental changes for the mother (Mercer, 1986; Rubin, 1984). While the period of adaptation to new motherhood lasts months, the first few weeks after childbirth are usually the most difficult, and can be overwhelming, involving changes in the personal lives of the parents, as well as in routines and household schedules (Affonso, 1987; Mercer, 1986; Raphael-Leff, 1991; Rubin, 1984). "The transition from hospital to home...can leave the mother, baby, and family vulnerable to physical and psychological stress" (Evans, 1991). The mother is faced with the continual demands of adjusting to, and learning to care for, a helpless baby at a time when she has not yet fully recovered from the physical and emotional stress of childbirth (Affonso, 1987; Becker, 1980; Curry, 1983; Hampson, 1989; Mercer, 1981; Rubin, 1984). At the same time, she is suffering from profound pervasive fatigue, sleep deprivation and disruption (Campbell, 1986; Gardner, 1991; Mercer, 1986; Rubin, 1984; Ruchala & Halstead, 1994), as well as emotional and functional disequilibrium, disorientation and disorganization (Mercer, 1986; Raphael-Leff; Rubin, 1984). Anxiety, mood swings, feelings of inadequacy, vulnerability, and a hypersensitive state are also characteristic of the puerperal woman (Leifer; Mercer, 1986; Raphael-Leff). She may have feelings of social isolation, and frustration from an inability to plan or schedule due to the constant and immediate demands of her newborn infant, and from a lack of time for herself (Mercer, 1986). There are shifts in, and a reordering of all her roles and relationships, particularly with her partner, as the marital relationship is affected by the stresses of adjusting to a new baby (Raphael-Leff; Sheehan, 1981). As well, there may be grief resulting from: frustration or disappointment about her labour and delivery experience; disappointment about having an infant not of the desired gender; an infant anomaly; or negative feelings about her body after childbirth (Hans, 1983; Mercer, 1981; Rickitt, 1987; Smith, 1989). She may also be grieving the loss of her former lifestyle, her changed financial status, and the loss of her occupation and work associates (Bennett, 1981; Rickitt).

The phases and maternal tasks of the puerperium have been outlined by several researchers (Gruis, 1977; Lemmer, 1992; Mercer, 1981; Rubin, 1961). The taking-in phase is a restorative period that lasts approximately two to three days after childbirth. The maternal tasks of this phase are recuperation from childbirth, review and integration of her labour and delivery experience, filling in any "missing pieces" she may have (Affonso, 1977; McKenzie, Canaday, & Carroll, 1982; Mercer, 1981; Rickitt, 1987; Rubin, 1961; Smith, 1989). The mother is dependent and passive during this phase, preoccupied with the emotional and physical changes following delivery. Sleep and food are important needs at this time. She is suffering from "sensory overload", and any teaching that is done in this phase will probably have to be repeated as she is not yet ready to assimilate much information (McKenzie et al.; Rickitt). The second phase is the taking-hold phase. During this phase, the mother's tasks are to relinquish her fantasy expectations of motherhood and her baby, to develop an interactive relationship with her real baby, and to assume the caretaking role. There is often disparity between reality and fantasy as she becomes aware of the enormous responsibility of caring for her infant 24 hours a day. She is encouraged by her baby's normal behaviors such as crying, feeding, sucking, burping, and elimination. She is anxious and may feel inadequate in looking after her baby, and she looks for positive feedback from her infant. She also needs encouragement and support from health care workers and family while she is learning the necessary caretaking tasks (Mercer, 1981). The blues are common during this phase, and are often experienced on the third, fifth, and seventh days postpartum (Rubin, 1984). Additional maternal tasks are to identify and fit the baby into the family context, and to begin to redefine existing relationships to include the baby, especially with her partner (Mercer, 1986; Lemmer). Attention to body image, and the changes that are taking place in her body are also important to the new mother (Mercer, 1981). The third phase of the puerperium commences a few weeks after delivery and lasts for several months. It is called the "bursting out-binding in" phase. The mother has recovered physically from the delivery, and is now ready to move out of the close confines of the home. She sometimes takes the baby with her, and sometimes leaves the baby in the care of a babysitter but suffers separation anxiety when she does so. At six weeks after birth, the mother has a general sense of wellbeing, is usually coping well with motherhood, and is enjoying her baby. Most families have developed orderly patterns of home life and baby care by this stage, and are coping well with the realities of parenting (Jennings & Edmundson, 1980). However, it may take as long as nine months after childbirth for the mother to feel whole, intact, and functional again (Rubin, 1984).

Many factors can affect the experience of new mothers in the early puerperium. Mercer (1981) developed a theoretical framework for studying factors that impact on the attainment of the maternal role: the mother's perception of the birth experience; early maternal-infant separation; social stress; self-concept and personality traits; infant temperament; child rearing attitudes; maternal age; maternal illness; and infant illness. In addition, previous experience with infants, the quality of her marriage, extent of the father's involvement with the baby, and help at home can help determine how smooth the transition will be for the mother (Pridham & Chang, 1991). Realistic expectations about motherhood and infants, and sufficient knowledge about childrearing can help ease the transition to motherhood (Evans, 1991). The care the mother receives in labor can affect how she assumes her mothering role. If her needs during labor were not met, she may have difficulty meeting the needs of her infant (McKenzie et al., 1982). Other variables such as culture, amount of anticipatory socialization, socioeconomic level, and educational level can impinge on the maternal role (Brouse, 1988; Jennings & Edmundson, 1980; Mercer, 1981). The follow up care provided in the puerperium by health care workers can have a profound impact on the new mother's skill and confidence in looking after her baby, and in dealing with the transition to motherhood. Lack of follow up can result in maternal maladaptation characterized by depression and family disorganization, and infant problems such as failure to thrive, neglect, abuse, and developmental deprivation (Donaldson, 1981).

Maternal concerns

There is confusion in the literature about the interpretation of 'postpartum concerns' (Fillmore & Taylor,1976; Rovers, 1986). It has been suggested that the definition of concerns is too broad and non-specific, that concerns mean different things to different people. A concern may mean a serious worry , a slight interest in, or wanting to learn about a topic (Fillmore & Taylor). Some researchers discuss maternal concerns in terms of stressors (Affonso, 1987; Pridham et al., 1986).

Numerous researchers have studied concerns of mothers in the first few weeks after childbirth. The researchers and the concerns identified are presented in Table 1 by their frequency. The studies documented have looked at concerns of new mothers from different perspectives, and over different time frames. Some have focused on the **concerns of primiparae** (Adams, 1963; Bennett, 1981; Brouse, 1988; Brown, 1967; Bull, 1981; Fillmore & Taylor, 1976; Leifer, 1980; Mercer, 1986; Sumner & Fritsch, 1977). Others have concentrated on the **concerns of multiparae** (Affonso, Mayberry, & Sheptak, 1988; Hiser, 1987; Moss, 1981). The **differences in concerns between multiparae and primiparae** have also been studied (Arizmendi & Affonso, 1987; Chapman, Macey, Keegan, Borum, & Bennett, 1985; Gruis, 1977; Harrison & Hicks, 1983; Larsen, 1966; Norr, Nacion, & Abramson, 1988; Pridham, Hansen, Bradley, & Heighway, 1982; Pridham et al., 1986; Rovers, 1986; Ruchala, 1991; Smith, 1989; Tribotti et al., 1988). Some researchers have studied maternal **concerns using stress or anxiety scales** (Arizmendi &

Table 1 Maternal concerns in the early postpartum period after hospital discharge

Concerns	Sources	Researchers
Concerns about self		
Fatigue	1,3,4,6,8,12,13,14,15,16,17,19,23,24,25,28	1. Adams, M. (1963)
Getting figure back	3,6,12,13,14,17,18,19,20,25,26	2. Anderson, E. (1987)
Emotional tension	2,12,13,14,16,19,25,26,28	3. Arizmendi, T., & Affonso, D. (1987)
Physical (episiotomy, breasts)	3,7,8,15,16,19,22,26,28	4. Bennett, E. (1981)
Finding time for self	4,7,12,13,14,19,25	5. Brown, L. (1967)
Blues,anxiety	15,16,19,235,27,28	6. Brouse, J. (1988)
Being a good mother	3,14,18,25	7. Bull, M. (1981)
Labor and delivery experience	2,3,16,25,28	8. Chapman,J., et al. (1985)
Diet	12,13,25,26	9. Elmer & Maloni (1988)
Postnatal exercises	12,18,25	10. Fillmore, C., & Taylor, K. (1976)
Constipation	7,20,28	11. Graef, P., et al. (1988)
Feeling isolated	7,12,13	12. Gruis, M. (1977)
Sexual intercourse	20,25	13. Harrison, M. & Hicks, S. (1983)
Family planning	12,23,25	14. Hiser, P. (1987)
Responsibility	4	15. Jansson, P. (1985)
Lack of knowledge	28	16. Larsen, V. (1966)
Concerns about baby		17. Leifer, M. (1980)
Feeding	1,2,3,5,7,8,9,10,11,12,14,15,18,23,24,25,26,27	18. Lemmer, C. (1987)
Physical care	1,2,7,11,13,18,21,22,25,26	19. Mercer, R. (1986)
Signs of illness	2,3,4,7,14,14,17,18,19,21,25	20. Moss, J. (1981)
Behaviour	3,6,8,9,11,12,18,21,23,26	21. Pridham,K., et al. (1982)
Crying	1,3,4,5,6,10,11,13,23,27	22. Rhode, M., & Groenjes-Finke, J.(1980)
Development	7,12,14,20,21,25,26	23. Rovers, R. (1986)
Unpredictable schedule	1,6,12,13,16,19	24. Rubin, R. (1984)
Safety	12,13,14,20,25	25. Ruchala, P. (1991)
Sleep patterns	1,7,8,11,27	26. Smith, M.P. (1989)
Skin	8,27	27. Sumner, D., & Fritsch, J. (1977)
Appearance	12,13	28. Tribotti, S., et al. (1988)
Elimination	1,10	
Concerns about family		
Regulating demands of family	2,3,8,12,13,14,16,20,23,25,26	
Marital relationship	12,17,19,20,25	
Housework	2,12,13	
Sibling rivalry	12,20	
Changes in living patterns	3	

Affonso; Farber, Vaughan, & Egelund, 1981), while others have focused on **breastfeeding concerns** (Graef,et al., 1988; Mogan, 1986), **concerns related to postpartum teaching** (Brouse; Rovers), and **adaptation to motherhood** (Affonso, 1987; Sheehan, 1981). Only a few studies have focused on **maternal concerns after early hospital discharge** (Anderson, 1987; Jansson, 1985; Lemmer, 1986), or **concerns related to telephone follow-up** (Rhode & Groenjes-Finke, 1980). A consistent pattern of maternal concerns in the early postpartum has been reported. These will be discussed under concerns related to self, baby, and family.

Self concerns. **Maternal fatigue** is a major concern for new mothers (Bennett, 1981; Campbell, 1986; Gardner, 1991; Harrison & Hicks, 1983; Mercer, 1986; Rovers, 1986; Rubin, 1984; Ruchala, 1991). Other major concerns mentioned frequently include: **body image / getting figure back** (Brouse, 1988; Gruis, 1977; Harrison & Hicks; Hiser,1987; Lemmer, 1987; Mercer, 1986; Ruchala, 1991; Smith, 1989); **emotional tension** (Gruis; Harrison & Hicks; Hiser; Mercer, 1986; Ruchala; Smith, 1989; Tribotti et al., 1988), and **physical concerns**, especially episiotomy and sore breasts (Arizmendi & Affonso, 1987; Bull, 1981; Chapman et al, 1985; Rhode & Groenjes-Finke, 1980; Smith; Tribotti et al.).

Infant concerns. **Infant feeding**, predominantly breastfeeding, is the single greatest concern for new mothers (Adams, 1963; Anderson, 1987; Ball, 1982; Chapman et al., 1985; Elmer & Maloni, 1988; Fillmore & Taylor, 1976; Graef et al., 1988; Rovers, 1986; Smith, 1989; Sumner & Fritsch, 1977). Other major infant concerns include: **caretaking** (Anderson; Brouse, 1988; Bull, 1981; Graef et al.; Harrsion & Hicks, 1983; Lemmer, 1987; Pridham et al., 1982; Ruchala, 1991; Smith); **signs of illness** (Arizmendi & Affonso, 1987; Bennett, 1981; Bull, 1981; Hiser, 1987; Mercer, 1986; Larsen, 1966; Lemmer, 1987;

Ruchala); **infant development** (Bull; Moss, 1981; Gruis, 1977; Pridham et al., 1982; Ruchala; Smith); **infant behavior** (Chapman et al.; Brouse; Elmer & Maloni; Rovers; Smith); and **crying** (Adams; Arizmendi & Affonso; Brouse; Brown, 1967; Fillmore & Taylor; Harrison & Hicks; Rovers; Smith). An increased number of concerns related to infant behavioral characteristics may be indicative of a mother who is more sensitive to her baby's behavioral repertoire (Pridham & Chang, 1992).

Family Concerns. The major concerns related to family are **regulating the demands of the family and fitting baby into the family schedule** (Anderson, 1987; Arizmendi & Affonso, 1987; Chapman et al., 1985; Gruis, 1977; Harrison & Hicks, 1983; Hiser, 1987; Larsen, 1966; Moss, 1981; Rovers, 1986; Ruchala, 1991; Smith, 1989).

Several factors can influence maternal concerns after childbirth. Parity makes a difference to the type of concerns. Multiparae and primiparae have somewhat different concerns. Primiparae have more concerns overall than multiparae and most of those are concerned with learning to care for and meet the needs of the baby (Bull, 1981; Elmer & Maloni, 1988; Gruis, 1977; Harrison & Hicks, 1983; Ruchala, 1991; Smith, 1989; Sumner & Fritsch, 1977). In one study it was found that primiparae had more minor concerns than multiparae but not more major concerns (Harrison & Hicks, 1983). Social isolation is often a concern for primiparae, and it can increase the mother's vulnerability and lead to feelings of helplessness (Bennett, 1981; Gruis; Rickitt, 1987). Multiparae have more concerns related to regulating demands of family members, and sibling adjustment (Affonso, et al., 1988; Gruis; Moss, 1981; Ruchala). Demographic factors such as maternal **age, and education level** can influence the number and intensity of concerns for a new mother. Older, more educated mothers tend to have more concerns than younger mothers with less education (Mercer, 1986; Norr et al, 1988; Rovers, 1986).

Pre-natal teaching can lessen infant care concerns after birth (Adams, 1963; Hahnemann, 1989). However, several researchers have found that attendance at prenatal classes resulted in mothers having significantly more concerns postpartum (Fillmore & Taylor, 1976; Harrison & Hicks; Hiser, 1987; Pridham & Chang, 1992; Rovers, 1986). Mothers who read more have also been found to have more concerns (Rovers). Maternal concerns change over time. Mothers' physical concerns decrease as healing takes place, and infant concerns such as caretaking decrease as mothers become more skilled in caring for their infants (Arizmendi & Affonso, 1987; Gruis, 1977; Pridham, Egan, Chang & Hansen, 1986; Pridham, Hansen, Bradley & Heighway, 1982; Ruchala, 1991). Other concerns may increase over time, for example, emotional tension in mothers (Bull, 1981), and concerns about infant behavior and development may increase over the first month postpartum (Pridham et al., 1982).

The mother's labour and delivery experience can influence the concerns she has in the early puerperium. A difficult or disappointing experience can affect her self-confidence and her adaptation to motherhood (Affonso, 1987; Arizmendi & Affonso; Bull, 1981; Larsen, 1966; Ruchala, 1991; Smith, 1989). Maternal self-confidence is a significant predictor of the number of concerns a mother has. More confident mothers have fewer concerns, while less confidence mothers have more anxiety about their infants (Ruchala). Maternal anxiety about her infant in the early postpartum period can sometimes result in longterm maternal concern (L. Hall, 1980). Fatigue can be an underlying factor in the mother's concerns in the first two weeks at home (Campbell, 1986; Gardner, 1991; Ruchala & Halstead, 1994).

The amount of nursing intervention and support she receives at home in the first few weeks after hospital discharge can be a major factor in decreasing her concerns (Ball, 1981; Gruis, 1977). Early and frequent follow-up and support can decrease concerns, as reassurance is provided, questions are answered, and help is provided with problem solving (Norr, & Nacion, 1987). Early and sustained support for the breastfeeding mother is critical in the establishment and maintenance of breastfeeding (Adams, 1963; Ellis & Hewat, 1983; Houston, 1984; Solberg, 1984). Gender of the baby has also been reported as influencing the type of concerns mothers have: mothers of male infants have more questions about feeding, sleeping, and crying, while mothers of firstborn females ask more questions related to the gastrointestinal system (Hiser, 1987; Sumner & Fritsch, 1977).

Mothers who are discharged early from hospital have additional concerns. Self concerns that are a significant problem are breast soreness and engorgement (Jansson, 1985; Lemmer, 1987; Stewart & Corvino, 1991); afterpains (Stewart & Corvino); amount of rest and being physically able to care for her baby (Anderson, 1987). Transitory depression after early discharge was found to be a major concern in one study (Jansson), but not in others (Carty & Bradley, 1990; James et al., 1985; Small, Lumley, & Brown, 1992). While infant feeding is still the major concern for infants discharged early (Anderson; Campbell, 1992; Jansson; Lemmer; Page-Goertz, 1989; Stewart & Corvino), one other significant concern that has not been discussed in relation to later discharge is neonatal jaundice (Britton & Britton, 1984; James et al.; Jansson; Lemmer; Thurston & Brock Dundas, 1985). Infant care and behavior are also major concerns (Jansson; Lemmer). Mothers discharged early from hospital make many telephone calls to doctors and midwives regarding concerns about infant care, signs of illness in their baby, and physical problems they are experiencing, and for reassurance to validate their mothering skills (Jansson; Lemmer).

Maternal information needs and information seeking

Information needs are needs for knowledge or for gaining the ability to do something. There are four types of information needs: felt needs, perceived by the individual or group; normative needs, perceived by experts; expressed needs arising out of felt needs and expressed in behavior such as asking questions; and comparative needs, arising out of the observed difference in performance between two groups (P. Sullivan, 1993). It is particularly important for health care workers to be aware of the felt needs of new mothers as these needs motivate them to seek information. Goals for teaching new mothers must include felt needs to be effective (P. Sullivan). However, nurse initiated teaching is also important in the early postpartum period as new mothers are hesitant to ask questions or they don't know what they need to know (Rovers, 1986). After childbirth, the new mother has to quickly become acquainted with, and learn about her baby's abilities, behaviors, and care taking needs (Brouse, 1988). Many new mothers feel inadequate to care for their babies because of their lack of knowledge about infant care (Flagler, 1988). Primiparae generally have a knowledge deficit about self care and infant care (Adams, 1963; Brodish, McBride, & Bays, 1987; Elmer & Maloni, 1988; Froman & Owen, 1990; Gorrie, 1984), and have more information needs than multiparae (Elmer & Maloni; Froman & Owen; Sumner & Fritsch, 1977). Knowledge is essential for learning infant caretaking skills (Evans, 1991). New mothers acquire two types of knowledge: **caretaking knowledge**, or information acquired through interaction with her infant (Adams; Elmer &

Maloni; Gruis, 1977; Martell, Imle, Horwitz, & Wheeler, 1989; Maloni, 1994; Sumner & Fritsch) and personal knowledge or information about the physical, behavioral, and personality characteristics of their infants, and their physical and psychological needs (Bull, 1981; Bull & Lawrence, 1985; Chapman et al.,1985; Gruis; Maloni).

Much of the research done on new mothers' information needs and their acquisition of knowledge has focused on identifying maternal concerns, and finding out what mothers would like to learn rather than identifying what knowledge has actually been acquired (Moss, 1981). " Concern for acquiring knowledge and the actual acquisition of knowledge...are conceptually different" (Maloni, 1994). Although new mothers have many information needs after childbirth, many of them do not perceive their lack of knowledge as being a concern (Bull & Lawrence, 1985; Tribotti et al., 1988).

Research related to information needs of new mothers is not clearly defined, as the topic is often included in research on maternal concerns. There are only a few studies that focus on information needs of new mothers. Several researchers have identified common information needs of new mothers in the early postpartum (Bull, 1981; Bull & Lawrence, 1985; Davis, Brucker, & MacCullen, 1988; Golas & Park, 1986; Hiser, 1987; Rovers, 1986; Sumner & Fritsch, 1977). Information needs focus largely on infant care and self care. Information needs about infant care focus on: feeding (Bull & Lawrence; Davis et al.; Sumner & Fritsch); illness and care of cord (Davis et al.); care (Bull & Lawrence; Golas & Park; Davis et al); behavior (Bull & Lawrence; Golas & Park; Rovers); and development (Hiser). Self care information needs include postpartum complications (Bull & Lawrence; Davis et al.); physical problems such as episiotomy, sore breasts, vaginal flow (Bull; Bull & Lawrence; Davis et al.); and return of figure to normal (Hiser, 1987; Rovers). The only information needs related to family that were identified were family planning (Rovers) and concern about other children (Hiser). Mothers have individual and diverse opinions on what other information is important to them in the early postpartum period.

There is debate in the literature regarding the best time for teaching the new mother information related to self care and infant care. Several researchers have studied whether the prenatal period was a suitable time (Adams, 1963; Bliss-Holtz, 1988; Hahnemann, 1989; Rubin, 1984; Sullivan, P., 1993; Williams, 1977). They found that mothers were focused on themselves and their labor and delivery, and interest in receiving child care information at that time was very low or non-existent. There have been conflicting reports about the effect of prenatal teaching about infant care. Gruis (1977) found that prenatal anticipatory guidance did not reduce postnatal concerns, however other researchers have found that some mothers who were given infant care information in prenatal classes had significantly higher knowledge about infant care after birth (Hahnemann; Hillier, Carey, & Slade, 1989; Pridham & Chang, 1992).

It has been reported extensively that mothers do not seek, and are not able to absorb information about infant care during the taking-in phase after childbirth, as their need for rest and recovery at this time is high (Becker, 1980; Gruis; Mercer, 1981; Rubin, 1961). The taking-hold phase of the puerperium has traditionally been touted as the time of maximal readiness for learning, and the best time for teaching new mothers about their babies (Adams; Hans, 1983; Rubin, 1961). During this phase, mothers are motivated to learn infant caretaking skills as they interact with their babies. However, Maloni (1994) found that mothers acquired the greatest amount of personal knowledge about their baby's physical characteristics on the first postpartum day. L. Hall (1980) found that structured, informative teaching about infant behavior two to four days after discharge from hospital positively affected the mother's perception of her newborn.

The learning needs of new mothers change over time in the postpartum period (Adams, 1963; Bull, 1981; Gruis, 1977; Rubin, 1984; Salmeron, 1988). It appears mothers need and acquire different information at different times after childbirth. Maloni (1994) identified specific patterns of information acquisition by new mothers during the first two weeks of the puerperium. She found that mothers learn more about their babies as persons than about how to take care of them in the first two weeks after childbirth (Maloni; Rubin, 1984). The greatest amount of that knowledge was acquired in the first three days. Other researchers found mothers showed an interest in infant behavioral activity around the second postpartum day (Bull & Lawrence, 1985; Chapman et al., 1985; Graef et al., 1988). The dominance of personal knowledge about baby in the first two weeks is important to the mother in order to differentiate her baby and is crucial for establishing a relationship with the baby (Bull, 1981; Chapman et al., 1985; Gruis; Maloni; Rubin, 1984). Knowledge of infant activity was acquired from the second to the 13th day postpartum. Most caretaking knowledge about infant feeding was learned in the first six days, and physical care from the seventh to the 14th day (Maloni). Golas & Park (1986) found that mothers who were taught infant care at two weeks after birth had more knowledge about infant care at one month postpartum.

There are several problems reported in the literature regarding the information provided to new mothers by health care professionals. The problems will be addressed from two perspectives: the mothers', and the nurses'. From the mothers' perspective, one problem is that very often a standard protocol for teaching is used, and teaching is often not responsive to the mother's needs (Davis et al., 1988; Field, Campbell, & Buchan, 1985; Field & Renfrew Houston, 1987; Field & Renfrew (Houston), 1991; Hanvey & Post, 1986; Krauser, 1976; Maloni, 1994; Martell et al., 1989; McKenzie et al., 1982; Rovers, 1986). As well, protocols for teaching mothers who are discharged in short-stay programs are often the same as those used for longer hospital stay. No adjustment is made to the amount of information provided nor are individual needs considered (Martell et al.). There are problems with this practice: there is too much information covered in a short period of time; the information covered is superficial; the mother is not able to retain much of what is taught; and there is little time for reinforcement due to time constraints in hospital. Another major problem expressed by mothers is that conflicting information and advice is given by nurses, particularly about breastfeeding. New mothers feel confused and upset when confronted with differing points of view from nurses. As a result, their confidence in their ability to breastfeed is reduced at a time when they need stability, continuity, and consistency of information, (Ball, 1982; Ellis & Hewat, 1983; J. Paterson,1984; Rovers).

Problems are also identified by nursing staff in relation to mothers' information needs. One problem is that postpartum nurses are faced with an acute shortage of nursing time for patient teaching, particularly with early hospital discharge (Norr et al., 1989). Second, the need for teaching has to be evaluated in relation to the mothers' needs for rest and recovery from her labor and delivery, and her inability to absorb much information in the taking-in phase of her recovery (McKenzie et al., 1982; Mercer, 1981; Rubin, 1961, 1984). Third, it is difficult to individualize teaching for the new mother in the first few days postpartum, particularly prior to hospital discharge, as the mothers often don't know what information they need until they are faced with a new situation (Brown, 1967; Bull & Lawrence, 1985; Rovers, 1986). Fourth, extensive teaching may not be possible during a home visit due to time constraints (Field & Renfrew (Houston), 1991; Norr & Nacion, 1987; Norr et al., 1989). Teaching everything at one time is unrealistic and contributes to information overload and inability to retain much of that information (McKenzie et al.; Evans, 1991). Teaching must be prioritized, and after discharge from hospital there should be continuity of teaching by the home follow-up nurses is important (Evans).

Several demographic factors have been shown to affect new mothers' information needs and their acquisition of knowledge in the early postpartum period. Age is one factor. Very young mothers sometimes put up a defensive barrier of sophistication and appearing to know and will only look for information within their own age group thereby missing out on learning opportunities (Rubin, 1984). Younger mothers require more information on self care activities, while older mothers seek more information on infant care (Rovers & Fuller, 1986; Salmeron, 1988). Education affects mothers information seeking behavior. Mothers with post-secondary education seek more information in the antepartum period. They attend prenatal classes, and read extensively (Lenz, 1984; Pickens, 1982; Rovers, 1986; Rovers & Fuller). They also acquire more knowledge in the postpartum period (Maloni, 1994). Mothers with less education perceive that they have fewer information needs (Hiser, 1987). Income can also influence mothers' information seeking: those with lower incomes tend to have less interest in acquiring information in the postpartum period (Hiser).

Parity also affects information seeking. Primiparae seek information more often than multiparae (Pridham & Chang, 1982). Early interaction with her baby stimulates the new mother to seek information early (Adams, 1963). Self-confidence also affects information needs. Mothers with less self-confidence tend to have more information needs (Rovers & Fuller, 1986). A long labor (over 10 hours) can increase the mother's specific information needs at seven to ten days postpartum (Brodish et al., 1987).

Information needs in relation to early hospital discharge have been studied by only a few researchers (Harrison, L., 1990; Martell et al., 1989). Mothers discharged early from hospital have increased needs for information about signs of illness in themselves and their babies, and about infant care and feeding (Martell et al.). Teaching for new mothers who are being discharged early should be individualized based on the needs identified when assessing the mother (Avery, Fournier, Jones, & Sipovic, 1982; Harrison, L.; Rovers, 1986), and should be limited to the important topics she needs to know at the time. Teaching also needs to be done at various points in the postpartum period as part of the home follow-up nursing care (Martell et al.).

Sources of information and help

The availability of resources to help and to provide information and reassurance about concerns in the early postpartum period is important to the new mother and helps to decrease her concerns (Bull & Lawrence, 1985; Cronenwett, 1985). The use of these resources is expected during the transition to being the mother of a new infant (Mercer, 1986). The amount of information provided, and the source of that information or help, varies from mother to mother (Pridham, 1987). The type of help provided can include: instrumental, such as help for household and infant caretaking; reassurance and feedback on how well the mother is coping; emotional support; and information related to needs and concerns.

Information is obtained from different sources at different times during pregnancy. Seeking information is continuous throughout pregnancy and is focused on ensuring safe passage through pregnancy, labour and delivery (Rubin, 1984). During pregnancy information is most often obtained through prenatal classes (Gruis, 1977; Entwisle & Doering, 1981; Ruchala, 1991), and reading (Entwisle & Doering; Rubin, 1984; Rovers, 1986; Ruchala, 1991; Sullivan, P., 1993). Prenatal preparation results in less medication use in labor, more positive feelings for baby, better mothering and early infant care, and more likelihood of breastfeeding and breastfeeding for longer (Entwisle & Doering).

Help and information in the early postpartum period is obtained from a variety of sources and these often complement one another (Rhode & Greonjes-Finke, 1980; Smith, 1989). Sources include: the mother herself as she gains experience through interacting with her baby (Maloni, 1994; Pridham & Chang, 1992; Pridham et al., 1982; Rhode & Greonjes-Finke); people, including husbands or partners, mothers, other relatives, and friends, as well as health professionals such as doctors and nurses; television and videos; and printed material. Information can be provided in a variety of ways: via telephone hot lines and telephone follow-up; during home visits; in group classes; during one to one consultation, teaching, demonstrations and observation sessions; and at neighborhood resource centres.

In Table 2 the common resources used by new mothers, type of help or information provided, and the concerns for which these resources are contacted are listed. Husbands or partners and mothers are the greatest sources of instrumental help for the new mother. One concern with using the previous generation as a source of information about infant care is that the new mother may receive either outdated information or misinformation (Evans, 1991). It is noteworthy that in the first month postpartum nurses have been reported as being both of great help (Rovers, 1986), and not a useful source of information (Gruis, 1977; Harrison & Hicks, 1983). It appears that when nurses are readily available they are considered a valuable source of help and information. Mothers who have contact with a nurse more than once consider her to be a useful source of information, help and reassurance (Brown, 1967; Rovers). The nurse's credibility as an information source also depends on the mother's perception of her as being approachable, and willing to take the time to provide needed information (Rovers). Nurses are the most common sources of information in hospital after childbirth but their availability and use as a resource often drops dramatically after discharge from hospital (Gruis; Harrison & Hicks). The exception to this is nurses who follow mothers through telephone calls or home visits in early discharge programs. Community health nurses providing a routine visit after hospital discharge are not considered to be helpful by new mothers (Gruis). Doctors are often consulted for problems with self care, infant care and illness. Books are often mentioned as a useful source of information (Gruis; Harrison & Hicks; Rovers; Smith, 1989).

Help is sought most frequently by new mothers for concerns related to baby (Gruis, 1977). Primiparae use health professionals as sources of information more often than multiparae (Smith, 1989). New mothers appear to seek help appropriately (Brown, 1967). Mothers discriminate in seeking resources for help and information, especially as the infant gets older (Pridham & Chang, 1992). More clinician help is sought when the concerns are caretaking issues (Pridham & Chang, 1992; Pridham et al., 1986). Lay help is sought more often for concerns related to infant behavioral characteristics (Pridham & Chang).

Several factors can influence which resources the mother contacts for help and information. The resources change over time: in hospital; during

Table 2

Postpartum Sources of Information and Help

Source of Information/Help	Type of information/help	Concern	Researchers
Self (personal experience interacting with infant)	Personal knowledge	Infant behavioural characteristics	Maloni, 1994 Pridham et al., 1982, Rhode & Groenjes-Finke, 1980
	Caretaking knowledge	Infant care	
Husband/partner	Instrumental	Household help Infant care	Adams, 1963; Brown, 1967 Entwisle & Doering, 1981 Gruis, 1977 Harrison & Hicks, 1983 Pridham et al., 1982 Pridham & Zavoral, 1988 Rhode & Groenjes-Finke, 1980 Smith, 1989
	Emotional support	Fatigue,regulating household demands,emotional tension Changing roles & responsibilities	
Mother	Instrumental	Household help Infant care	
Hospital nurses	Information 1-1 teaching of infant care skills Reassurance	Self-care- sore breasts,episiotomy Infant feeding & care Infant behaviour, growth & development	Adams, 1963 Maloni, 1994 Pridham et al., 1982 Smith, 1989
Community health nurse	Information about infant care, growth, & development Reassurance	Infant feeding Infant behaviour, growth & development	Adams, 1963; Brown, 1967 Gruis, 1977; Harrison & Hicks, 1983 Maloni, 1994; Pridham et al., 1983 Smith, 1989;
Early discharge follow-up nurse	Information about self care, infant care, behaviour, growth & development Reassurance	Self care Infant feeding and care Infant behaviour Coping with maternal role	Rhode & Groenjes-Finke, 1980 Ruchala, 1991
Doctors	Information about labor & delivery, self care, infant care Problem solving	Labor & delivery experience Self care, infant feeding Infant care and behaviour, growth, & development	Gruis, 1977; Harrison & Hicks, 1983 Maloni, 1994 Pridham et al., 1982 Ruchala, 1991
Printed material (books, pamphlets)	Information	Breast concerns Infant feeding, care, behaviour, growth & development Diet, exercise, return of figure	Evans, 1990; Gruis, 1977 Maloni, 1994 Pridham et al., 1982 Smith, 1989
Relatives, friends	Information, help with infant care Emotional support	Finding time for self Infant feeding & care	Adams, 1963 Harrison & Hicks, 1983 Rovers, 1986

the first two weeks postpartum; and after the first month (Maloni, 1994; Pridham & Chang, 1992; Pridham et al., 1986;). Age can also influence the choice of resources: younger mothers are more hesitant to ask questions (Rovers, 1986); teenagers tend to seek help and information from their own peer group (Rubin, 1984); older mothers tend to receive less information from nursing staff, perhaps in the sometimes mistaken belief that they have experience caring for infants (Mercer, 1986). Socioeconomic factors such as income and education can influence what resources mothers use. Middle class mothers tend to read more (Entwisle & Doering, 1981). Previous experience with babies tends to reduce the amount of information sought for basic infant caretaking skills (Rovers).

Maternal confidence

Maternal self-confidence

Most of the literature on confidence related to motherhood focuses on maternal self-confidence. The terms self-confidence, self-esteem, and self-concept are all used interchangeably in the literature. Shea and Tronick (1988) point out that there appears to be a general component and a more specific component to the concept of self-esteem. General self-esteem is a relatively stable and enduring characteristic of a person which does not change with circumstances, but may change slowly over time. The specific component of self-esteem is related to specific situations and conditions, which may have a transitory effect on general self-esteem by increasing or decreasing it. Maternal self-confidence fits into this category. It is defined as a mother's general feelings of confidence in her mothering ability (Shea & Tronick), and is a process rather than a stable product (Rovers & Fuller, 1986). Some researchers have outlined the dimensions that make up maternal self-esteem: caretaking ability; general ability as a mother; acceptance of the baby;

expected relationship with the baby; experience of pregnancy, labor and delivery; own childhood experience and relationship with parents; and body image and health after childbirth. Each of these dimensions measures a distinct component of maternal self-esteem, although the first four are closely related to each other (Leifer, 1980; Shea & Tronick; Shereshefsky & Yarrow, 1973).

The meaning of maternal self-confidence in new mothers is unclear. The findings of much of the research focusing on maternal self-confidence are problematic in that they are retrospective studies and are based on clinical impressions. As well, there has not been a standardized, objective and validated instrument for assessing self-confidence (Shea & Tronick, 1988). Others argue that a standardized instrument may not reflect the special skills required by new mothers, or the ambiguous nature of motherhood in North American society today (Rovers & Fuller, 1986). Some researchers have explored the concept of maternal self-confidence as an indicator or product of maternal adaptation (Cronenwett, 1985; Shereshefsky & Yarrow, 1973). Others have looked at the significance of individual personality characteristics on the relationship between self-confidence and maternal adaptation (Curry, 1983; McKenzie et al., 1982). Very little research has focused on the concept of maternal self-confidence as being a variable in the process of maternal role transition (Rovers & Fuller),

There appear to be four factors which can have a profound impact on maternal self-confidence: adaptation to motherhood; early contact with baby and amount of maternal-infant interaction; maternal perception of baby; and individual belief about adequacy as a mother. How the mother perceives the adaptation to motherhood, as easy or difficult, affects maternal self-esteem. An easy adaptation correlates with higher self-esteem (Curry, 1983; Roberts, 1983). Early contact with her baby after birth and opportunity for prolonged periods of maternal-infant interaction result in higher maternal self-confidence (Brown, 1967; Greenberg, Rosenberg, & Lind, 1973; O'Connor, Vietze, Sherrod, Sandler, & Altemeier, 1980; Seashore, Leifer, Barnett, & Leiderman, 1973; Sostek, Scanlon, & Abramson, 1982; Sullivan, D., 1976). Denial of early contact with her baby, or prolonged separation, such as an N.I.C.U. stay, can lower maternal self-confidence (Kennell, Trause, & Klaus, 1975; Seashore et al., 1973). The mother's perception of her infant's behavioral characteristics and temperament as easy or difficult to look after, and her ability to read her infant's cues, influences how she interacts with her baby, and subsequently affects maternal self-confidence (Gibaud-Wallstrom, 1986; Gojmerac, 1988; Roberts, 1983; Shereshefsky & Yarrow, 1973; Walker et al., 1986; Zahr, 1991). As well, her perception of her adequacy to cope with the stress of new motherhood, and to care for her baby in the face of constant demands, physical complications, fatigue, and feelings of disorganization, has a direct bearing on her self-esteem, her caretaking performance, and her interaction with her baby (Ballenski & Cook, 1982; Gibaud- Wallstrom; Gojmerac, 1988; Leifer, 1977; Shereshefsky & Yarrow; Pridham & Schultz, 1983; Rutledge & Pridham, 1987).

There are many other interrelated factors which can affect maternal self-confidence. These can be divided into four areas: maternal; infant; demographic; and environmental.

Maternal factors. Parity. Primiparae are more anxious (Gojmerac, 1988; Small et al., 1992), and have lower maternal self-confidence levels than multiparae (Ball, 1984; Froman & Owen, 1989; Gojmerac, 1988; Rovers & Fuller, 1986; Seashore et al., 1973; Small et al.; Walker et al., 1986). The mother's personality characteristics of ego strength, self-confidence, and nurturing qualities are all interrelated (Ballenski & Cook, 1982; Shereshefsky & Yarrow, 1973). A previous negative childbirth experience such as stillbirth or neonatal death can create anxiety about the present baby and result in lowered self-confidence (Lever-Hense, 1994), as can a difficult labor and delivery experience or a Caesarean delivery (Grossman, 1980, cited in Shea & Tronick, 1988). Increased concerns about baby can also result in lowered maternal self-confidence (Gojmerac).

Infant factors. Infant illness, anomaly or prematurity can result in separation of mother and infant, maternal anxiety, feelings of guilt, inadequacy, and incompetence which can all affect maternal self-confidence and long term maternal-infant adaptation (Klaus & Kennell, 1976; Seashore et al., 1973; Sostek et al., 1982; Shea & Tronick, 1988). Gender of the infant, particularly if the baby is not of the desired gender, can affect maternal self-confidence, with male gender generally correlating with higher maternal self-confidence (Shea & Tronick). Success or failure in breastfeeding may significantly affect a mother's self-esteem and her perception of competence (Rutledge & Pridham, 1987; Shea & Tronick; Walker, et al., 1986). Mothers who successfully breastfeed, particularly primiparae, have less anxiety, increased mother-infant mutuality, and increased confidence (Flager Virden, 1988).

Demographic factors. Length of hospital stay is inversely related to maternal self-confidence with mothers discharged early having higher self-confidence (Carty & Bradley, 1990; James, et al., 1987; Jones, 1978; Small et al., 1992). Age is also inversely related to maternal self-confidence. Older mothers have higher expectations of themselves but have less maternal self-esteem than younger mothers (Mercer, 1986; Pridham et al., 1991; Rovers & Fuller, 1986). Rovers & Fuller found that education level is inversely related to maternal self-confidence, but other researchers have not found this (Pridham et al., 1991). Higher family income is associated with increased self-confidence (Gojmerac, 1988; Rovers & Fuller). Time can affect maternal self-esteem, but there is not consensus about how it affects it. Gojmerac found that self-esteem increased over time, but Flager (1988) found that it was less positive over time. Walker et al., (1986) found that a mother's attitude toward herself was more positive over time, but attitude toward her baby became less positive over time. Ethnicity can also have an effect on maternal self-esteem. D. Sullivan (1979) found that Hispanic mothers had lower maternal self-confidence and competence at one month postpartum than their white counterparts.

Environmental factors. Social support, especially emotional support from her mate, and acceptance by her family, affects a mother's self-esteem and sense of competence (Mercer, 1986; Wandersman, Wandersman, & Kahn, 1980). Mothers who have lower self-confidence acknowledge the need for social support, while mothers with higher self-confidence are less likely to perceive the need for support (Rovers & Fuller, 1986). Knowledge and information acquired through reading, prenatal classes, teaching and anticipatory guidance after childbirth, can affect maternal self-esteem and independence (Jennings & Edmundson, 1980; Rovers & Fuller). There is conflicting evidence, however, as to how the acquisition of knowledge does affect maternal self-confidence. Some researchers have found that lack of knowledge can lower maternal self-confidence (Flager,1988; Shereshefsky & Yarrow,1973). Others have found that mothers who read extensively in preparation for parenthood perceive the transition to motherhood as being more stressful than those mothers who do not read (Entwisle & Doering, 1981). Conversely, Hillier et al., (1989) found that women who attended prenatal classes had significant increases in knowledge and confidence in infant care, but Golas & Park (1986) found that teaching new mothers about infant behavior two weeks after childbirth did not significantly increase their self-confidence in being able to assess their infant's behavioral cues. Encouragement and assistance for the mother from nursing staff and family can also have a positive effect on a mother's self-esteem (McKenzie et al., 1982).

Different aspects of maternal self esteem have been studied. Shea & Tronick (1988) developed a self-report inventory to clinically evaluate maternal self-esteem. They found that maternal self-esteem is a characteristic of the individual and that person's unique situation. At two days after childbirth, maternal self-esteem was dependent on infant health status, maternal health status, family support, infant gender, feeding difficulty, maternal perception of the infant, and mother-infant interaction. More confident mothers were more sensitive to their infants. Gojmerac (1988) studied new parents sense of competence at four time periods: prior to childbirth, after childbirth, at one month and three months postpartum. She found that parents' sense of competence rose gradually over time. Difficult infant characteristics and little social support were associated with low sense of competence, but anxiety, previous sense of competence, and perception of baby were the best predictors of sense of competence in mothers. Ruchala (1991) studied the relationship between maternal concerns, confidence and social support in primiparae and multiparae at two weeks and six weeks postpartum. She found a very significant difference in the confidence levels of each group between two and eight weeks postpartum with multiparae having higher confidence levels at two weeks postpartum. Low parity and reduced maternal confidence were significant predictors of a higher number of maternal concerns and post discharge complications in the early postpartum period.

Confidence in infant care ability

There is little documented research focusing on confidence in infant care or the relationship between maternal self-confidence and confidence in infant care. Usually the two types of confidence are discussed together. In a controlled experimental study, D. Sullivan (1976) studied the caretaking and feeding skills of mothers who had early contact, roomed-in with their babies, and had instruction in infant care in the early postpartum period. She found that at one month postpartum, mothers who had early contact with their babies had significantly higher self-confidence and competence in infant care than mothers who did not have early contact. Infant problems in the experimental group at one month postpartum were minimal, while the control group had many infant problems. Rutledge and Pridham (1987) examined the relationship between the early postpartum experiences of primiparae and multiparae and their perceptions of competence in infant feeding and care while in hospital after childbirth. They found that mothers' perceptions of competence were associated with in-hospital preparation for bottle-feeding mothers and the amount of perceived rest for breastfeeding mothers. Walker et al. (1986) studied the infant feeding behavior of multiparae and primiparae, looking at their attitudes toward themselves and their infants, and their feelings of self-confidence at 1-2 days, and 4-6 weeks after childbirth. They found that self-confidence in primiparae was related to maternal feeding behavior at 4-6 weeks after childbirth. The demographic variables of maternal age, education and socioeconomic class were also associated with more sensitive maternal feeding behavior at 4-6 weeks. For multiparae, only attitude to self was related to maternal behavior at 1-2 days postpartum. Rovers and Fuller (1986) explored the relationship between overall maternal self-confidence and confidence in infant care knowledge and ability. They also looked at self-confidence in relation to perinatal variables and the quality of mother-baby interactions. In contrast to Shea & Tronick (1988), they found there was an inverse relationship between mother-baby interaction and self-confidence, with mothers who rated themselves as highly confident being less sensitive in their interactions with their infants during early feeding periods than mothers who saw themselves as less confident. They also found an inverse relationship between overall maternal confidence and age, attendance at prenatal classes, level of education, socioeconomic status, and perceived need for social support. Mothers who interacted least with their babies were young, less educated, did not attend prenatal classes, read very little, and rated themselves as confident. The mothers who interacted most with their babies attended prenatal classes, were well read, and did not rate themselves as highly confident.

Early maternity discharge

Hospital stays for mothers and their newborn babies have slowly been getting shorter over the past forty years, and the trend is continuing for two reasons. Firstly, over the past three decades there has been increasing consumer demand for changes in attitude toward birth and maternal/newborn care, with less family separation, increased father involvement and enhanced parent-infant interaction, treatment of mother and baby as well, not ill, and for an environment that the parents can control (Jones, 1978; P. Patterson, 1987; Regan, 1984; Scupholme, 1981; Thurston & Brock Dundas, 1985). More recently, in the last two decades, escalating costs of hospital stays have forced hospitals to institute early discharge programs for low-risk mothers and babies (Beck, 1991; Norr and Nacion, 1987; P. Patterson).

The first documented early discharge programs for low risk mothers and babies were implemented as a means of relieving hospital bed shortages for increasing maternity populations (Guerriero, 1943; Hellman, Kohl, & Palmer, 1962; Nabors & Herndon, 1956). While the normal hospital stay was ten days, mothers in these first programs were discharged between eight hours and five days after delivery with follow-up home visits by a nurse, extending from the day of discharge up to the third postpartum week. In 1958, in Bradford, England, early discharge between 12 and 48 hours after delivery was commenced in order to free beds for the admission of high risk toxaemic patients during pregnancy. Mothers were transferred home by ambulance, were provided with home help, and were visited daily by a domiciliary midwife for ten days (Craig and Muirhead, 1967). There are reports of other programs initiated for shortage of maternity beds in the 1970's and 1980's (Jansson, 1985; Lubic, 1988; Norr et al., 1988; Power, Wolf, & Van Coeverden de Groot, 1980; Sadler, 1989; Waldenstrom, 1987, 1989). Mothers in these programs were not given the choice of early or later discharge. Mothers who were discharged from hospital early, without a choice, were found to feel both resentment and dissatisfaction with early discharge (Hellman et al; Waldenstrom, 1989).

The structure of early hospital discharge programs for mothers and newborns changed between the 1960's and the 1980's. Women were recruited into programs during the prenatal period, and the length of time they were followed after hospital discharge decreased (Beck,1991). Early discharge programs vary considerably: in length of hospital stay, with most being under 48 hours ; discharge time; type and number of follow-up home visits; length of follow up; and availability of telephone follow-up (Beck; Mehl, Peterson, Sokolosky, & Whitt, 1976; Norr & Nacion, 1987). Programs that have been developed as a result of consumer demand are widely documented (Avery et al, 1982; Beck; Campbell, 1992; Carty & Bradley, 1990; Drummond, Boucher, Chisholm, Geraci, & Kay, 1984; James et al., 1987; Jones, 1978; Mehl et al.;

McIntosh, 1984; Norr and Nacion, 1987; P. Patterson,1987; Regan, 1984; Scupholme, 1981; Thurston & Brock Dundas, 1985; Yanover, Miller, & Jones, 1976). Central to all of these programs is choice, where the mother has the choice of early discharge or longer hospital stay. Researchers have found that mothers who choose early maternity discharge have similar characteristics. They are motivated, self-confident, and want control over their own care (Hall & Carty, 1993; Jones). They choose early discharge for several reasons: privacy; the relaxed home environment; increased parent-infant bonding and father involvement with baby; less family separation; concern for other children; concentration on wellness of self and baby not illness; unrestricted breastfeeding; and more social support (Campbell; Campbell & Field, 1990; Harrison, 1990; Jansson, 1985; Jones; Lemmer, 1986; P. Patterson; Stewart & Corvino, 1991; Thurston & Brock Dundas; Waldenstrom, 1989). Some researchers have found that women under 25 years of age tend to choose early discharge more often than women over 25 years (Campbell & Field; Small et al., 1992). In most of these programs, the mother is accepted into the program during pregnancy, with program orientation classes provided prior to birth (Avery et al.; Jansson; McIntosh, 1984; Scupholme; Yanover et al.). Some programs include a home assessment in the last month of pregnancy (James et al.; McIntosh & Ure,1984; Scupholme). While most early discharge programs serve a middle-class population, some have been set up in inner city, low-income areas (Norr et al., 1988; Scupholme). There are reports of cost savings with early discharge programs (Campbell & Field; Drummond et al.; Jansson; McIntosh, 1984; Mehl et al.; Scupholme; Yanover et al.). However, there is also debate as to whether these programs actually do save significant amounts of money, citing the difficulty in establishing true costing using the daily patient cost rate in hospitals (McIntosh, 1984). Also, administrative costs of home care, and cost of physician use after discharge may not be included in estimates of cost for home visits (P. Patterson). Today, due to the spiralling cost of hospital stay, early discharge within 24 hours is becoming the prevailing standard of care for low risk mothers and their normal newborns .

The basic components of early discharge programs today are: established criteria for inclusion in the program; physician approval for discharge after maternal and infant assessment in hospital; discharge between two and 48 hours post-delivery; home visits by clinical nurse specialists, or specially trained obstetric or community health nurses from community or home health care agencies; a telephone hotline mothers can access for help with questions or problem solving; telephone follow-up after discharge may also be included (Beck, 1991; Harrison, 1990; Norr & Nacion, 1987; Page-Goertz, 1989; P. Patterson, 1987; Regan, 1984).

Criteria for inclusion in an early discharge program is usually low-risk normal delivery of a term baby with no major complications for mother or baby. The need for early postpartum follow-up after early maternity discharge is stressed as there is less time for observation and assessment of the mother and baby in the hospital, and less time for teaching the mother about self care and care of her baby (Evans, 1991; McGregor, 1994). Mothers are discharged at a vulnerable time when their need for rest and recovery from childbirth is high, and their ability to absorb information is low. This often results in fragmented care (Evans; Jansson, 1985; Lemmer, 1986; McGregor; Sadler, 1989). As primiparae are generally more anxious than multiparae (Small et al., 1992), they are particularly in need of early home follow-up, especially if the mother is breastfeeding (Jansson; Page-Goertz, 1989). The timing and number of postpartum home visits and/or telephone calls also varies considerably between programs and between individual mothers within each program. Usually the earlier the mother is discharged, the more frequent the contact made with her (Hellman et al., 1962; Jansson, 1985; Waldenstrom, 1987). Some programs also offer a homemaker service but the demand for this service is not great (Campbell, 1992; Drummond et al, 1984; McIntosh & Ure, 1984; Regan, 1984; Stewart & Corvino, 1991). During the home visit the nurse deals with any immediate concerns, then performs a comprehensive assessment of mother and baby using a structured assessment tool as a guide (Carty & Bradley, 1990; Lemmer, 1986; Norr et al., 1988; Power et al., 1980; Stewart & Corvino). She identifies any early problems, and provides reassurance and individualized teaching to the mother (Regan).

Early discharge programs have proven to be safe for mother and baby with decreased exposure to pathogens and low morbidity (Beck, 1991; Guierro, 1943; Harrison, 1990; Hellman et al., 1962; James et al., 1987; Jansson, 1987; McIntosh & Ure, 1984; Nabors & Herndon, 1956; Norr et al., 1988; Norr and Nacion, 1989; P. Patterson,1987; Power et al., 1980). There are many advantages of early discharge for mothers. Perceived choice and a sense of control is key to satisfaction with early discharge (Hall & Carty, 1993). As well, early bonding with baby, a less stressful environment, the comfort of home and being able to keep familiar routines, having the family together, and the individualized care provided in home visits are important to mothers (Campbell, 1992; Carty & Bradley, 1993; Gee, 1984; Stewart & Corvino, 1991; Thurston & Brock Dundas, 1985; Waldenstrom, 1987). Mothers who are discharged early have more confidence in caring for their infants, get more rest at home, have higher breastfeeding rates, fewer concerns, and less postpartum depression (Carty & Bradley; Gee; Hall & Carty; James et al.; Norr et al; P. Patterson; Waldenstrom, 1987, 1988, 1989; Small et al., 1992; Stewart & Corvino).

The disadvantages of early discharge programs are minimal and are far outweighed by the advantages. Lack of physical rest, especially for multiparae, is cited as one disadvantage of early discharge, as well as lack of professional support if no follow-up care is provided (Gee, 1985; Ruchala & Halstead, 1994). The presence of a painful perineum from episiotomy or laceration, and a perceived difficult labor are also factors for not choosing, or dissatisfaction with, early discharge (Campbell & Field, 1990; Edmonton Board of Health, 1993; Stewart & Corvino, 1991). Mothers discharged early have a need for information that would normally be provided in hospital during longer hospital stays (Gorrie, 1984). The biggest disadvantage cited is that mothers are discharged before breastfeeding is established and they often need assistance, especially primiparae (Campbell & Field; Jansson, 1985; Page-Geortz, 1989; Stewart & Corvino). Sometimes congenital malformations may be missed during the hospital stay, and neonatal conditions such as jaundice are not evident until 2-3 days birth (Britton & Britton, 1989; James et al., 1985; Thurston & Brock Dundas, 1985). A few problems are usually encountered after early discharge, but these are no different nor more frequent than those found in mothers and infants discharged later from hospital (Guerriero, 1943; James et al.; Jones, 1978; Norr & Nacion, 1987; Yanover et al., 1976). Maternal problems most often encountered are breast related problems, such as sore nipples, engorgement, and difficulties with breastfeeding, as well as perineal complications, haemorrhoids and fatigue (James et al.; Jansson; Thurston & Brock Dundas; Waldenstrom, 1987; Weinberg, 1994). Maternal readmission to hospital is not common, although one early study found higher readmission after early discharge (Hellman et al, 1962). Infant problems after early discharge are more frequent than maternal problems. By far the most common infant problem is hyperbilirubinemia, which is the main reason for readmission to hospital (Britton & Britton, 1984; Gee; Jansson). Repeat home visits are usually made by the nurse to check on neonatal jaundice, and for breastfeeding problems.

It is very difficult to compare research about early maternity discharge programs because of the lack of a standardized operational definition of early postpartum discharge (Beck, 1991). Several comparative studies have been conducted, comparing outcomes of early discharge programs with outcomes from traditional discharge programs. Mehl et al. (1976) compared a group of early discharge mothers and babies with a group of traditional discharge mothers. They found that early discharge mothers were more positive emotionally, more comfortable at home, and had an earlier milk supply due to demand feeding. As well, the neonates in the traditional discharge group had more problems. Lemmer (1986) compared a group of primiparae and their infants after early discharge under 24 hours with a group of mothers experiencing longer hospital stay, looking at concerns and outcomes at one week postpartum. She found there was no significant difference between the two groups. P. Patterson (1987) compared mothers in a voluntary early discharge group with mothers in a late discharge group, looking at the relationship between the early discharge experience and the characteristics and attitudes of the mothers. She found that mothers in the early discharge group were more likely to be multiparae, to be knowledgeable about the early discharge program, and to make the decision to go home early. They were also more likely to give birth between midnight and 0600 hours, room in with their babies, bottlefeed their newborns, and feel that it is preferable to rest at home in comfortable surroundings after childbirth. Late discharge mothers felt the need to stay longer in hospital for rest, nursing support and teaching about infant care. James et al.(1987) looked at a group of mothers discharged early between 24 and 48 hours after childbirth with a group of mothers who were discharged at 5-7 days postpartum. She found that there was no difference between the groups in terms of maternal or neonatal morbidity in the first six weeks postpartum. Early discharge mothers had significantly less mild-to-moderate postpartum depression, and scored higher on postpartum adjustment in terms of amount of rest obtained, perceived satisfaction of infant needs, social support provided, and self-adjustment. Norr et al. (1988) compared three groups of mothers (single, black and Hispanic) from a low-income area who were undergoing different hospital discharge protocols: one group was discharged early without their babies; another group was discharged early with their babies; the third group were discharged together up to 72 hours after birth. The only group who had a home visit 2-3 days after discharge were the mothers and babies who were discharged early together. This group of mothers had higher attachment scores, fewer concerns, and greater satisfaction with their time of discharge than the other two groups.

A few researchers have conducted randomized, controlled studies looking at early hospital discharge after childbirth. Waldenstrom (1987) compared a group of mothers and their partners randomly allocated to an experimental group who were discharged between 24-48 hours after birth with follow-up home visits, with a group of mothers and their partners who were allocated to a control group who were discharged at the traditional time. Significantly more couples in the early discharge group had a positive experience with discharge when compared with the traditional discharge group. Parents in the early discharge group wanted close bonding with their newborn, and no separation from other children. Parents in the traditional discharge group liked the medical security, support, and opportunity for the mother to rest in the hospital. In another study, Waldenstrom (1989) compared four groups of early discharge mothers: discharge on days 0-1; discharge on day two 'voluntarily'; discharge on day three 'voluntarily'; and discharge on day three 'involuntary'. She looked at the effect of voluntary versus involuntary discharge on mothers' experiences and found that women who chose their own length of hospital stay were slightly younger than women discharged without choice. Women who were discharged involuntarily at day three were more critical and dissatisfied with early discharge than those who chose discharge on day three. As well, the women discharged involuntarily had a higher proportion of problems, especially fatigue. An interesting finding was that women in the three 'voluntary' discharge groups had lower breastfeeding rates at two months postpartum than the 'involuntary' discharge group and lower rates than the county average. The researcher concluded that there are two different groups of women who choose early discharge: women who find it difficult to adapt to hospital care, and self-confident women who want to take responsibility for their own care. Carty and Bradley (1990) studied mothers assigned to three different hospital discharge groups: 12-24 hours; 25-48 hours; and four days. Follow-up home visits varied between the groups. More mothers in the early discharge groups were breastfeeding without supplements at one month postpartum than the mothers in the four-day discharge group, and were more satisfied with their care than mothers in the longer stay group. Mothers discharged within 24 hours after birth had higher confidence in mothering at one week postpartum, were more satisfied with their discharge time, and more satisfied with the nursing care they received. The later discharge group had higher depression scores at one month postpartum.

Small et al. (1992) studied women's experiences and opinions of their length of stay in hospital after childbirth. Stays ranged from less than 24 hours to more than five days. They found that most women (82%) were satisfied with their length of stay. Women under 25 years of age felt that their stay had been too long. Shorter length of hospital stay did not result in more concerns, but did show that women who were discharged early were more confident about looking after their baby, less likely to suffer from postpartum depression, and were more likely to breastfeed. Hall and Carty (1993) used a grounded theory approach to study mothers' experiences in a planned early discharge program. They found that mothers managed by taking control of their own and their infant's care through the antepartum, intrapartum, and postpartum periods. Taking control, was influenced by their beliefs about family and home, their personalities, their ability to accept help, and the support available to them. Consistent follow up by the same nurse was seen as important by the women in this study. Campbell & Field (1990), in a predictive study of hospitalized antepartum women, found that, if given the choice, 28% of women would choose early discharge. They also found that a potential episiotomy and a perceived difficult labor would negatively influence the decision to choose early discharge. Things that would positively influence the choice of early discharge were: having school-aged children but not pre-school children; not working outside the home; or returning to part-time work, not fulltime. The mothers in the study also rated the availability of having a telephone hotline as very high. Stewart & Corvino (1991), in a follow up study on the same population, compared early discharge mothers with later discharge mothers. They found that 21% of women chose early discharge, and only 22% of those used the available hotline. They also found that mothers in the later discharge group were more fatigued, had less sleep, and had more painful perineums, while the early discharge mothers complained more often about breast pain and afterpains. The early discharge group were highly satisfied with their nursing care at home, and less satisfied with the nursing care in the hospital than the later discharge group.

It appears that mothers who do not have a choice about early discharge are resentful or dissatisfied and have more problems and fatigue than mothers who choose early discharge (Hellman et al., 1962; Scupholme, 1981; Stewart & Corvino, 1991; Waldenstrom,1987,1988,1989). Mothers who choose later hospital discharge may be from different ethnic backgrounds, or have different priorities. They cite the need for rest, teaching and support from nurses, and medical security (Jones, 1978; Waldenstrom, 1987). Maternal expectations and attitudes are also a factor in satisfaction with the choice of discharge program (Waldenstrom, 1987). Researchers who have studied outcome differences between early discharge mothers and traditional discharge mothers found no significant difference in maternal or infant morbidity at six weeks postpartum (Hellman et al.; James et al., 1987; Jones, 1978; McIntosh & Ure, 1984).

Nursing intervention by telephone follow-up

The telephone is used in a variety of ways in medical, nursing and community programs. It is a common method of follow-up in ambulatory care and day surgery units in hospitals to ensure that services are in place, and clients are functioning well (Wasson & Gaudette, 1992). It can be used in medical clinics to reduce office costs and increase the use of office time, as well as to decrease unnecessary office visits (Thayer, 1984; Wasson & Gaudette). It is useful for monitoring the conditions of persons with chronic health care problems, or the elderly, in order to offset problems early and inexpensively (Wasson & Gaudette). It is also useful in community programs set up for parents as primary prevention before crises occur, and to reduce specific conditions known to be associated with child abuse, such as lack of support, isolation, use of physical punishment, and family violence (Rauen, 1985; Elmer

& Maloni, 1988). Telephone follow-up is also being increasingly implemented as a cost-effective means of high-risk antenatal home monitoring as costs of hospital stays escalate (Hill et al., 1990).

Following new parents and babies at home by telephone after discharge from hospital is an integral part of some early discharge, public health, and Neonatal Intensive Care Unit programs. Documented programs include nurse-initiated telephone calls to new mothers which provide continuity of care beyond the hospital, parent support and reassurance, information, teaching about self and baby care, and anticipatory guidance. Phone calls are made by postpartum nurses, clinical nurse specialists, or public health nurses to the new mother any time between twenty-four hours and six weeks postpartum. The number of calls made to each mother varies widely, ranging from one to five. Often a structured tool is used for conducting the telephone interview, and recording of information (Avery et al., 1982; Brodish et al., 1987; Butts et al., 1988; Chen, 1993; Donaldson, 1977, 1988; Evans, 1991; Haight, 1977; Hampson, 1989; Jansson, 1985; Mehl et al., 1976; P. Patterson, 1987; Rhode & Groenjes-Finke, 1980; Siegel, 1992; Twaddle, Liao, & Fyvie, 1993; Weinberg, 1994; Wilson, 1973; Yanover et al., 1976). Mothers are also invited to call into the postpartum unit at any time if they have a question or a problem. Some programs have a separate warm line or hot line service available for parent-initiated calls to the postpartum unit, N.I.C.U., public health clinic, or nurse on call. They are used for answering questions, assessing problems, and providing supportive intervention and referral where necessary. Parents make numerous calls to obtain information and problem solve about issues such as breastfeeding, behavior problems, self care and infant care. Many calls are made by parents who feel inadequate, and are seeking reassurance of normalcy (Butts et al.;

Evans; Gray, 1992; Haight; Lubic, 1988; Rush & Kitch, 1991; Stewart and Corvino, 1991; Weinberg).

The advantages of telephone follow-up are that it promotes independence and self-confidence in new parents, and eases anxiety (Butts et al, 1988; Donaldson, 1977, 1988; Elmer & Maloni, 1988; Rauen, 1985; Siegel, 1992; Thayer, 1984). It can be a basic preventive intervention in helping to solve small problems before they become crises (Wasson & Gaudette, 1992). It can reduce the number of visits out of the home for new mothers and babies, increasing clinician contact with less waiting and travelling time (Hampson, 1989; Wasson & Gaudette).

The main disadvantage of telephone follow up is that serious problems may be missed. Parents often lose objectivity with their own children, some overreacting, while others become very casual, and may not realize the seriousness of a situation, or they may not have the necessary information to assess the problem accurately (Thayer, 1984). For this reason, it is extremely important to have sensitive, knowledgeable personnel with good communication, history taking and assessment skills, who can listen, monitor cues, and validate perceptions (Donaldson, 1977; Elmer & Maloni, 1988; Thayer). Good interpersonal skills are also essential for the success and credibility of the program. Callers can quickly sense if the person answering their call views it as an inconvenience or unimportant (Thayer).

There have been a variety of studies done looking at telephone intervention and support in the postpartum period. Donaldson (1988) conducted a randomized clinical trial looking at the effect of weekly telephone calls on the maternal adaptation of primiparae discharged within 48 hours of childbirth during the first eight weeks postpartum. She found no significant difference between the group receiving telephone calls and the control group. However, the findings included a variety of problems that probably would have received delayed treatment or gone undetected if the nurse had not called. In a meta-analysis of nine controlled clinical trials Bernard-Bonnin, Strachtenko, Girard, & Rousseau (1989) studied the influence of hospital practices on breastfeeding duration. They found that early contact and telephone support by a nurse in the postpartum period had a positive effect on breastfeeding duration. Graef et al. (1988) conducted a study of breastfeeding mothers' concerns after hospital discharge, and used daily telephone calls for two weeks after hospital discharge, and then twice a week for the next two weeks, as a means of tracking maternal concerns. They found that mothers had many concerns in the first two weeks after hospital discharge. Although the effect of the telephone follow-up in relation to the concerns was not examined, the researchers suggest the findings justify the need for telephone follow-up to provide support and opportunities to address major concerns. Rhode and Groenjes-Finke (1980) conducted a randomized controlled study looking at the effect of nurse-initiated telephone calls on the second day at home on maternal concerns and sources of information. They found that mothers receiving the calls used a larger number of resources and had a significantly higher concern about "family planning" at six weeks than the mothers who did not receive the calls. The nurse who phoned was listed as the highest source of support and information by mothers in the experimental group.

Several researchers have compared the effect of telephone contact and home visits. Wilson (1973, cited in Rhode & Greonjes-Finke, 1980) conducted a random, clinical trial with breastfeeding mothers assigned to three groups: home visits, telephone contact, and a control group. She looked at mothers' anxiety created by various mothering tasks. She found that the two groups receiving nursing intervention had reduced anxiety, but there was no significant difference between the home visit group and the telephone contact group. Ament (1973, cited in Rhode & Greonjes-Finke, 1980) looked at the effect of nursing intervention on breastfeeding. She found that the mothers in the experimental group who received both home visits and telephone contact had a greater percentage successfully breastfeeding at six weeks than did mothers in the control group. Chen (1993) studied the effects of home visits and telephone contact on mothers' compliance with breastfeeding in Taiwan. She found no significant difference between the two groups receiving the intervention and the control group.

Other studies have been conducted looking at the effect of telephone intervention. Butts et al.(1988) conducted a study of a telephone on-call service for parents of very low birthweight infants discharged from N.I.C.U. They looked at use of the service and parental concerns after discharge. Parents were telephoned three times per week for two weeks, and then weekly for eight weeks. Parents were also able to contact the nurse daily. They found that there were a high number of calls initiated by parents even though they were being telephoned regularly. Brodish et al. (1987) conducted a study with mothers of newborns to identify factors that might predict the need for home health care follow-up. A telephone call was made at 7-10 days postdelivery to assess mother's and baby's home health care needs, and to ask her opinion of the benefit of the telephone call. Almost all mothers found the telephone call provided encouragement and reassurance on the care they were providing themselves and their babies, and 45% had specific informational needs. Interestingly, mothers with a longer labour had more informational needs. Those mothers with informational needs rated the benefit of the telephone call higher than those without specific needs. Wasson & Gaudette (1992) conducted a study of telephone 'house calls' from a medical clinic. They compared a group of patients who came for traditional visits with a group who came in less frequently and were followed with telephone calls. They found that the group receiving follow-up telephone calls had significantly better outcomes: fewer clinical visits; less medication use; fewer hospital stays; and fewer intensive care stays. The effect of regular, sustained calls in reducing concerns and promoting confidence has not been systematically evaluated.

Summary

There is extensive evidence in this literature review that the transition to motherhood is a difficult time for a new mother. New mothers have many concerns related to self care, infant care, and personal and family adjustment, and they have many needs for help and information about how to care for themselves and their babies. They initially lack maternal self-confidence and confidence in their ability to care for their infants. The timely provision of individualized teaching and information to a new mother, together with encouragement and reassurance that she is managing well, helps to increase her self-confidence. Mothers who are discharged early after childbirth have more self-confidence than mothers who stay longer in hospital. Choice of early discharge is important. Mothers who are not given the choice resent being discharged early. As early maternity discharge becomes a fact of life, mothers' concerns and information needs change. The crucial factor in easing the transition to the mothering role is the follow-up care and teaching that she receives after early hospital discharge. Currently, early and consistent nursing intervention for new mothers after early hospital discharge is limited. The use of the telephone as a means of sustained contact with new mothers in the first week after early hospital discharge has been little studied.

CHAPTER III

METHOD

The proposal for this study was approved by the joint Ethics Review Committee of the participating hospital and the affiliated university. Permission was obtained from the the hospital to conduct the study. Support for the study was provided by the Director of Nursing, the Patient Care Manager of the Obstetrics units, and the Chief of the Department of Obstetrics.

Research design

This prospective study, using an experimental group and a no treatment control group, spanned a six month time period. The research design was a 2 x 3 factorial design based on a mixed model, representing a combination of within subjects and between groups design. The within subjects factor was time, and the between groups factor was the treatment. The factorial design enables examination of the independent and interactive effects of the independent variables on the dependent variables over time (Burns & Grove, 1987; Christensen, 1988; Kerlinger, 1986; Polit & Hungler, 1993). There were two independent variables: **telephone follow-up** and **time**. The four dependent variables under study were **maternal concerns**, **information sought**, **overall maternal self-confidence** and **confidence in infant care ability**. Two equivalent randomized groups of first time mothers were compared on the dependent variables. The independent variable, **telephone follow-up**, was applied to the subjects in the experimental group daily for seven days after hospital discharge. Measurements of the dependent variables occurred at three time periods for both groups: prior to hospital discharge;

two weeks after hospital discharge; and six weeks after hospital discharge. The research design is illustrated in Figure 2.

Figure 2 Research design

Time frame: 6 weeks

Experimental group	$M_1T_1T_2T_3T_4T_5T_6T_7$	M_2	//	M_3
Control group	M_1	M_2	//	M_3

M = Measurement (questionnaire administration)
M_1 = day of hospital discharge (interview)
M_2 = 2 weeks after hospital discharge (mailed questionnaire)
M_3 = 6 weeks after hospital discharge (mailed questionnaire)
T = Treatment (a daily telephone call x 7 days commencing the day after hospital discharge)

Limitations of the research design

Mailed questionnaires. A mailed questionnaire may result in a relatively low return thus decreasing the reliability and validity of the findings.

Threats to internal validity. Although threats to internal validity of the study have been reduced as much as possible by the use of a control group and randomization to groups, other factors may have affected the findings. These include:

History. As the study was conducted over a six week time frame, events occurring during that time may have affected subject responses: the change in hospital discharge times that occurred during the data collection; changes in medical condition of a few mothers and infants; the unquantified Community Health Nurse contact; or individual family and environmental events.

Experimental Mortality. As a mailed questionnaire was used for the second and third measurements, and there were several weeks between measurements, there was some mortality of subjects from both groups.

Threats to external validity of the study

As the sample was recruited from new mothers delivering at one hospital, the findings of this study cannot be generalized to the entire population of new mothers undergoing early hospital discharge after childbirth.

Instruments

Eight instruments were used to collect data. A description of each one follows.

Subject Information Sheet

This form contained the code number and identity data for each subject, as well as obstetric and infant biographic data. It was completed for each subject by the researcher at the time of recruitment.

Demographic / Biographic Data Sheet

This tool was used to obtain demographic and biographic characteristics of the subjects (see Appendix C-2). It was completed by the researcher at the initial interview prior to the subject's discharge from hospital.

Maternal Concerns and Information Scale

The Maternal Concerns and Information Scale (see Appendix C-3) was modified with permission from a tool developed by Rovers & Isenor (1986) for a study which was conducted to guide the development of a parent education program. The original tool used a 7-point Likert scale to measure mothers' level of interest, worry, and confidence on 24 topics within three categories: care of self; care of baby; and personal and family adjustment. Data were also sought on whether the mother received information on each topic, and the source of that information. It appears that validity and reliability testing was not done for this tool, as there is no mention of psychometric data in the report of the study. As the principal researcher is now deceased, it is not possible to obtain that information. However, she did allude to problems with the instrument, and questioned the validity of the interest variable. She found that mothers rated their interest in information as a general desire for more information, rather than as an active willingness to seek specific information about a topic. In modifying the tool for the present study, four limitations were considered. First, the use of the multiple variables, interest, worry and confidence, on the original tool appeared complicated. As the mothers in this study would complete the scale twice as a self-report, the potential for confusion in presenting it in its original form was high. Second, as Rovers cited the mothers' difficulty in interpretation of the interest variable, it was decided to eliminate this variable. Third, as two other scales were used to rate mothers' confidence it was decided to remove the confidence variable. Fourth, the original tool had an open column for listing source of information. To facilitate coding and analysis for the present study it was decided to give specific choices for this variable: nurse; doctor; relative; friend; book or pamphlet; or other.

The modified instrument

In the modified instrument 31 items were included in the three categories of self, baby, and personal and family adjustment, that can be a concern or worry for new mothers. The subjects were asked to grade their degree of worry or concern on a 7-point Likert scale, where 1 represented no concern and 7 represented great concern. Mothers were then asked to indicate whether they sought information on any of the items, and if so, who or what, was their source of information .

Reliability: Internal consistency of measurement was assessed using Cronbach's Alpha at each questionnaire administration. The Alpha measurements were 0.84 at M1, 0.84 at M2, and 0.75 at M3. The Alpha measurements of 0.84 at the first and second questionnaire administrations showed that the questionnaire had a high degree of reliability. The lower Alpha at the M3 possibly reflects changes in the mothers' concern levels which are to be expected at the six week measurement. They may also reflect decreased interest in completing the questionnaire a third time.

Confidence Scales. Two scales for measuring maternal confidence were used, looking at self-confidence as a variable in the process of transition to new motherhood.

Overall Maternal Confidence Scale

The Overall Maternal Confidence Scale (see Appendix C-4) is an eleven item global scale developed by Rovers and Fuller (1986) to measure the mother's perceived ability to deal with the adjustment to being a new mother. Maternal confidence is graded on a 7-point Likert scale, where 1 represents the lowest degree of confidence, and 7 represents a high degree of confidence. In this study the instrument was used in its original form with permission.

Reliability: Reliabilty measurements of the instrument for Rover's study were Cronbach's Alpha measurements of .83 and .81. Cronbach's Alpha measurements for this study were .89 at M1, .94 at M2, and .94 at M3, indicating a high degree of reliability of the scale across the three administrations.

Confidence in Infant Care Scale

The Confidence in Infant Care Scale (see Appendix C-5) is a 12 item global scale modified from the original 10 item scale developed by Rovers and Fuller (1986) and used with permission. The scale measures the degree to which mothers report their level of confidence in specific infant care knowledge and skills.

The modifications made to the original tool were to split one item, 'feeding', into two items, 'breastfeeding' and 'bottlefeeding', and the single item 'wet and soiled diaper' into two separate items, 'wet diaper' and 'soiled diaper'. Confidence is graded on a 7-point Likert scale, where 1 represents lowest confidence and 7 represents a high degree of confidence.

Reliability: Reliability for this instrument was established by Rovers with Cronbach's Alpha measurements of .86 and .85. Reliability of the instrument for this study was established with Cronbach's Alpha measurements of.85 at M1, .85 at M2, and .82 at M3. These measurements indicate internal consistency of the scale across each administration.

Telephone interview sheet

This form was modified from one developed at the Doctors Medical Center (Siegel, 1992, see Appendix C-6). It was used by the researcher to record pertinent information during daily telephone calls to the subjects in the experimental group. It has space for recording of any problems, and information on how they were addressed. It also lists 29 items in the three concerns categories of self, baby, and adjustment. Mothers were asked each day if these items were a major concern, minor concern, or no concern. This list of items proved to be a useful guide for teaching and anticipatory guidance during the telephone calls.

Intermediate Questionnaires - Experimental group & Control group

These questionnaires were developed for this study for use at the second measurement (see Appendices C-8 & C-9). They are identical with two exceptions: the experimental group questionnaire has an additional question about the usefulness of the telephone calls made by the researcher, and contains a nurse researcher alternative for problem solving action. On this form subjects provided biographic information about satisfaction with hospital discharge time, information given in hospital, and experience with self and baby care since discharge from hospital. They were also invited to add any comments they wished.

Summary Questionnaires - Experimental group & Control group

These questionnaires were developed for this study for use at the third measurement (see Appendices C-10 & C-11). They are similar to the Intermediate Questionnaires, and are identical with one exception: the experimental group questionnaire contains a nurse researcher alternative for problem solving action. On this form subjects provided biographic information on experience regarding self and baby care during the last four weeks of the study, current infant feeding, and problems encountered over the previous four weeks in relation to self care and infant care. They were also able to add any comments they wished.

Validity of the instruments.

Content and face validity of all the instruments was assessed by two nurses with expert knowledge of obstetrics and the postpartum period. In addition, two mothers who had had babies in the months prior to the study pretested the instruments. A few problems were identified, and recommended changes were made prior to data collection.

The sample

The sample was a nonprobability convenience sample from the target population of first time mothers at the participating hospital. The population of women who attended this hospital for childbirth was an eclectic mix of professional women, university students, wives of graduate foreign students, wives of professionals, and landed immigrants including Polish, east Indian, and Chinese, many of whom spoke little English. In addition, as the hospital is a tertiary care hospital, there was a group of mothers who had been transferred to the hospital from other city hospitals, from the northern half of the province, and areas up to the Arctic circle for management of high risk conditions of pregnancy.

Inclusion criteria. To be included in the study mothers must have delivered vaginally with no major complications, have a baby more than 37 weeks gestation at delivery, weighing at least 2500 grams who had no major complications and was discharged with his/her mother. The subjects were also required to be living with the father of the baby, able to read, write, and understand English, and have a phone. Discharge time was restricted to 48 hours or less after childbirth.

Exclusion criteria. Mothers were excluded from the study if they were delivered by Caesarean Section, incurred third or fourth degree perineal lacerations, or extensive vaginal or cervical lacerations, had a postpartum hemorrhage, or developed a vaginal or perineal hematoma. Mothers who had looked after a previous baby by adoption or marriage were excluded as it was felt that they would be more confident and would have different concerns. Mothers whose baby was admitted to the Neonatal Intensive Care Unit were also excluded. Women who had experienced a previous stillbirth or neonatal death were also excluded as these women are generally more anxious in the postpartum period (Lever Hense, 1994)

Recruitment. Subjects were recruited on the postpartum unit after delivery. Each potential subject who met the criteria for inclusion, determined by the researcher in consultation with the charge nurse, was handed a participant information sheet (see Appendix A) by a nurse on the postpartum unit and informed that the researcher would visit her later to answer any questions.

Some hours later or the next day, the researcher then visited each woman to answer questions, explain how assignment to groups would take place, and ask if she was interested in participating in the study. If so, written informed consent was obtained in duplicate (see Appendix B). Of 208 possible subjects, there were 71 who did not fit the inclusion crtieria. Of the remaining 137 potential subjects, 26 refused to participate, and a further eight agreed to take part in the study but left the hospital before the first measurement scales could be completed. From the remaining 103 subjects, four were dropped from the study for various reasons: two babies developed complications and were hospitalized longer; one mother stayed longer waiting for a medical consultation for her baby's club foot; one mother, assigned to the experimental group, was unable to be contacted by telephone for the first two days after discharge. Ninety nine (99) subjects comprised the final sample.

Assignment to groups. The subjects were each interviewed by the researcher prior to hospital discharge and the first measurement scales were completed at that time. After the interview, subjects were randomized to the experimental or control group using sealed and numbered envelopes prepared prior to data collection by someone not involved in the study. The researcher was blind to the contents of the envelopes. The subject was not aware of her group assignment until the day after discharge. If she was assigned to the experimental group, she received a telephone call from the researcher telling her about the telephone follow-up. Subjects in the control group did not receive any contact until the second set of instruments was mailed to them two weeks after discharge from hospital. Of the 99 subjects in the study, 50 were assigned to the experimental group, while the other 49 were assigned to the control group. A power analysis indicated that a sample of 50 subjects in each group having a medium effect for analysis of variance (Anova) at the p=0.05

level of significance will yield a power over 0.80 (Cohen, 1969; Glass & Hopkins, 1984) .

Ethical considerations

As participation in this study was voluntary, subjects were able to terminate involvement at any time. Ethical considerations were contained in the participant information sheet (see Appendix A), and were also outlined verbally to prospective subjects by the researcher during discussion about the study. They were replicated in the informed consent form (see Appendix B) which was signed by each subject following verbal consent and prior to the first interview. They are based on guidelines issued by the Canadian Nurses Association (1983) and the University of Alberta (1991) concerning ethical treatment of human subjects.

Data collection

Data collection for each subject occurred three times during the six week period of the study: prior to hospital discharge; two weeks following discharge; and six weeks following discharge (Figure 2, p. 53). The only difference in data collection between the two groups was the addition of seven daily telephone calls for subjects in the experimental group, commencing the day after hospital discharge .

First measurement (M1). The measurement instruments were completed during the initial interview prior to discharge from hospital. The Subject Information sheet, Demographic/Biographic Data sheet, Maternal Concerns and Information Scale, Overall Maternal Confidence Scale, and Confidence in Infant Care Scale were completed at this interview. As most subjects were discharged in the morning, the interviews were usually conducted between 0830 hours and 1100 hours. The interview method for the first measurement was used for two reasons: First, on initial inspection the Maternal Concerns and Information Scale appears complex, and it was anticipated that if mothers were shown how to complete it, it may promote a higher response rate for later measurements. Second, it was thought that personal contact with the researcher might also promote a higher response rate.

Second measurement (M2). The second measurement for subjects in both groups occurred two weeks after hospital discharge. A second set of the measurement scales together with a covering letter (see Appendix D-1), the Intermediate Questionnaire appropriate to the group and a stamped addressed return envelope was mailed to each mother. A reminder letter (see Appendix D-2) was mailed to any mother who did not return the instruments, completed or blank, after two weeks from initial mailing.

Third measurement (M3). The third measurement took place six weeks after discharge from hospital. The envelope mailed to the subject at this time contained another set of the measurement scales together with a cover letter (see Appendix D-3), the Summary Questionnaire appropriate for the group, and a stamped, addressed envelope for return. A reminder letter was mailed to any mother who did not return the instruments, completed or blank, after two weeks from initial mailing.

Telephone follow-up. Telephone calls to participants in the experimental group were made by the researcher every day for seven days commencing on the day after discharge. The telephone calls were semi-structured and followed a preplanned format (see Appendix C-7). A Telephone Interview Sheet was completed at every telephone call. At the initial call, the researcher explained the purpose of the call: to answer questions; to check if she had any concerns or problems; and to provide support. The mother was also told that she could call the researcher at home at any time if she had a question or problem. On the seventh day, the mother was told that the calls would stop that day, but if the mother wanted to call the researcher about any question or problem during the next five weeks, she was welcome to do so. A contingency plan was in place if any subjects from the control group called the researcher about a question or problem. The researcher would refrain from answering the question but would suggest an appropriate resource person for the subject to contact.

Storage of data

The researcher will keep the list of subject names, addresses, telephone numbers, and code numbers in a locked drawer accessible only to her. These will be kept for five years according to University of Alberta policy. Raw data sheets, computer data sheets, computer discs, and computer analysis sheets will be stored in another locked drawer accessible only to the researcher. These will be kept for seven years as required by University of Alberta policy.

Data Analysis

Data from completed scales, questionnaires, and telephone interview sheets, were read and coded by the researcher prior to data entry. Numerical, dichotomous, and categorical data was entered into a computer by an assistant, who was blind to the identity of the subjects, using the SPSS for Windows program (Norusis, 1992). Data from each instrument were kept in a separate file, and were entered in a multivariate setup in which each subject's responses to items on the same instrument for the three measurement periods resided in the same case (Norusis, 1992). Responses to open-ended questions on the Demographic/Biographic Data Sheet, Intermediate Questionnaires, and Summary Questionnaires were recorded and coded by the researcher, content analysis was performed and common themes recorded.

After cleaning the data, frequencies and descriptive statistics for each variable were computed. Inferential statistics were computed as follows:

repeated measures analysis of variance for the difference within and between groups on numerical data i.e. concerns, overall maternal confidence, and confidence in infant care; Chi square analysis for the difference between groups on dichotomous data (information sought), categorical data such as high and low concerns, and sources of information, as well as some biographical data. The correlation between the Maternal Confidence Scale and the Confidence in Infant Care Scale was computed, as well as Cronbach's Alpha measurements for reliability of the Concerns and Confidence scales at each measurement period.

Overview of the study

An overview of the hypotheses tested, data collection instruments used, times for data collection, and the data analysis performed is presented in Figure 3.

Figure 3

Overview of Research Study

Hypotheses	Instruments	Administration times	Analysis of data
New mothers who are telephoned daily by a nurse after early discharge will: #1. have fewer concerns than will control group mothers #2. have less intense concerns than will control group mothers #3. seek less information than will control group mothers	Maternal Concerns & Information Scale -both groups	1. Prior to hospital discharge 2. 2 weeks after discharge 3. 6 weeks after discharge	D.V.:-Maternal concerns - Information sought - Sources of information **Analysis:** Maternal concerns: -frequencies: low, high -repeated measures Anova -Chi square Information sought:Chi square Sources of information: -frequencies, Chi-square
#4. have more overall maternal self-confidence than will control group mothers	Overall Maternal Confidence Scale -both groups	1. Prior to hospital discharge 2. 2 weeks after discharge 3. 6 weeks after discharge	D.V:Maternal self-confidence **Analysis:** -total confidence score -mean, SD, range -repeated measures Anova
#5. have more confidence in infant care ability than will control group mothers	Confidence in Infant Care Scale -both groups	1. Prior to hospital discharge 2. 2 weeks after discharge 3. 6 weeks after discharge	D.V: Confidence in infant care **Analysis:** -total confidence score -mean, SD, range -repeated measures Anova
	Telephone Interview Sheet -Experimental Group	Daily X 7 days after hospital discharge	I.V.: Telephone follow up D.V.: Concerns **Analysis:** -frequencies: minor, major
	Demographic/Biographic Data Sheet (both groups)	Prior to hospital discharge	
	Intermediate Questionnaire -Experimental group -Control group	2 weeks after hospital discharge	**Analysis:** -frequencies, means, ranges -Chi-square -content analysis of comments
	Summary Questionnaire -Experimental group -Control group	6 weeks after hospital discharge	

CHAPTER IV

FINDINGS

Chapter 1V is organized in the following manner. First, the progress of the study will be described. Second, the demographic, obstetric, and biographic data about the mothers and babies will be summarized. Then the findings from the data analysis relative to the dependent variables will be reviewed. The significance of the findings in relation to the research hypotheses outlined in Chapter I will be addressed. This will be followed by discussion of findings about the telephone follow-up provided to subjects in the experimental group. Throughout the report of the findings the three measurement times are referred to as: M1 (first measurement), M2 (second measurement), and M3 (third measurement).

Progress of the study

The data collection period of the study spanned 6 months, from May to November, 1994. The hospital policy regarding early discharge times changed during the data collection period, from 48 hours to 36 hours after childbirth. The number of subjects in the experimental and control groups who were discharged at each policy time is shown in Table 3.

Table 3 Subjects in Experimental and Control Groups Discharged at each Hospital Discharge Policy Time

Group	Experimental group (n = 50)	Control group (n = 49)	Total in each discharge group
48 hr discharge group	12	18	30
36 hr discharge group	38	31	69

The number of subjects in each group at each measurement period is shown in Table 4. The response rate was higher than anticipated given the number of measurements, and the type of measurement (mailed questionnaires). There are two possible explanations for the high response rate. First, personal contact with the researcher made the subjects feel involved in the study, and second, they felt that the study was important and wanted their own experiences to be recorded.

Table 4 Subject Response Rate at each questionnaire administration

	Experimental group		Control group		Overall
Admin.	Response	Non-response	Response	Non-response	Response Rate
M1	50 (100%)	0	49 (100 %)	0	100 %
M2	47 (94%)	3	45 (91.8%)	4	92.9%
M3	46 (92%)	1	43 (87.8%)	2	89.9%

Examination of the characteristics of study dropouts revealed a random pattern. At M2, five subjects dropped out of the study and did not complete the second or third questionnaires. Two were from the experimental group, and three were from the control group. The two dropouts from the experimental group were not expected, as all the subjects in that group appeared interested in the study and stated that they found the telephone calls helpful. Two additional subjects did not return the second questionnaire at M2 but did complete the third one at M3. At M3, five further subjects failed to return the questionnaires but the two previously mentioned subjects who omitted the second questionnaire did return the third one. One subject (in the experimental group) had to return to China for a family funeral at the time of the third measurement. The reasons for non-response in the other subjects is not known.

Reminder letters proved to be useful in tracking subjects who were late returning their packages. Fifty eight (58) reminder letters were sent to subjects two weeks after the initial mailing of the questionnaires, resulting in the return of 40 completed and two blank questionnaires (72.4% response from the reminder letters). The questionnaires returned after the receipt of a reminder letter resulted in some fluctuation in measurement intervals which may have resulted in some inexactness of scores. It was decided not to substitute the mean or another score for missing data. When a question received "no response" it was omitted from calculations.

The initial interview at M1 took longer than anticipated. The mean time was approximately 35 minutes with a range of 20 minutes to one and a half hours. The actual time needed to complete the questionnaire without any interruptions was 20 minutes. Two factors contributed to the longer interview time. First, there were frequent interruptions when medical, other hospital personnel, and visitors entered the room to speak with the subject or phone calls occurred. Second, the scale was reactive. When subjects were asked to score their concerns on items on the Maternal Concerns and Information Scale, some mothers stated that they had not received any information on a particular item and wanted to know what they 'should' know. When this happened, the researcher asked the subject to wait until the scales were completed, then she spent time answering the questions. It was felt to be unethical not to provide information when it was requested by the subjects. She also assisted the mother with baby care on a number of occasions during the interview when nursing staff was not available. Mothers appreciated the help when it was given. As the study progressed, a few problems were experienced with the instruments. These will be addressed in Chapter V.

Making daily telephone calls to the subjects in the experimental group was not without its problems. It was sometimes difficult to contact the subject on the first day. Husbands and mothers were very protective of the new mother and tried to shield her from unwanted telephone calls. On several occasions the researcher had to convince the husband that his wife had agreed to be in the study and that it was necessary to talk to her that day. One subject was dropped from the study because her husband would not allow the researcher to speak to his wife, suggesting she call back in ten days! In a number of cases, telephone answering machines proved to be a hindrance in making the first contact with the mother. The researcher could only leave a message and hope that the mother would call back. Two mothers did not return the calls on the first day, but contact was made on the second day. Once the researcher had explained the purpose of the calls, the subjects were quite willing to receive them, although some appeared to be overwhelmed initially when they were told they would be called every day for seven days. During the first telephone call, the subjects were told by the researcher that they should say when a call was being made at an inconvenient time and the researcher would call back. This happened often. The mothers' responses to the calls changed over the week from polite compliance to eager participation as they discovered the researcher was a consistent resource who could answer their questions, help them to deal with problems, and provide reassurance that they were coping well. Most subjects kept lists of questions to ask at the next call. Many mothers stated they were sorry to have the calls cease after seven days. Although they were told they could call the researcher at any time for the next five weeks, only four calls were received in the following five weeks. These will be discussed with the findings from the telephone follow-up.

DEMOGRAPHIC AND BIOGRAPHIC DATA

Characteristics of the mothers and infants comprising this sample were similar between the experimental and control groups for demographic and biographic data. Maternal and infant demographic data are presented in Table E-1 (see Appendix E).

Maternal demographic data

There was no significant difference in subjects' age, education level, or family income between the experimental and control groups. The education level of the subjects is noteworthy with 34 (34.3%) of the them having an undergraduate or graduate university degree, and a further 45 (45.4%) having a college diploma or some university education. These education levels are considerably higher than the general population. In the Province of Alberta in 1991, only 10.6% of women had a university degree, while 36.7% had some university education (Population Lab., University of Alberta, 1995). Family income level was also above the average with 43% of the subjects having an annual family income over $50,000. The education and family income levels are representative of an upper middle class population. More subjects in the experimental group attended prenatal classes than subjects in the control group, with the difference between the two groups approaching $p = 0.05$ significance ($p = 0.066$).

Interview times after birth. Interview times are shown in Table E-1 (see Appendix E). Independent t-test analysis found there was no significant difference in interview times between the experimental and control groups ($t = -0.71$ (97df), $p = 0.478$).

Discharge times after birth. Two factors affected the discharge time: the time of the baby's birth, and the change in hospital policy. The majority of mothers who stayed longer than 48 hours in hospital gave birth in the late evening or during the night. As it was not customary to discharge patients during the night, their hospital stays were longer. The discharge times for the experimental and control groups, as well as the 48 hours discharge group and the 36 hours discharge group are shown in Table 5. Independent t-test analysis found that there was no significant difference between the experimental and control groups in the number of hours spent in hospital before discharge (t = -0.80 (97df), p = 0.423). The presence of an outlier in the experimental group (discharged at 12 hours) did not result in a significant difference in discharge hours occurring between the experimental and the control group. The hospital policy change regarding discharge times did not result in a significant difference between the two groups on Chi square analysis (χ^2 = 1.90 (1df), p = 0.168).

Table 5 Discharge times after birth
Difference between Experimental & Control groups

Group	N	Mean hours	SD	Range
Whole sample	99	40.99	8.11	12 - 58
Experimental group	50	40.34	8.15	12 - 52
Control group	49	41.65	8.09	26 - 58
48 hr discharge group	30	43.93	7.94	27 - 57
Experimental group	12	41.50	8.42	27 - 52
Control group	18	45.56	7.41	30 - 57
36 hr discharge group	69	39.71	7.89	12 - 58
Experimental group	38	39.97	8.15	12 - 51
Control group	31	39.39	7.69	26 - 58

Maternal obstetric and biographic data

Table E-2 (see Appendix E) presents data relating to perineum, experience of labor and delivery, and experience with baby since discharge.

Perineum. Three categories were established for state of perineum after delivery: intact; episiotomy; and laceration. Chi square analysis revealed no significant difference between the experimental and control groups on state of the perineum.

Experience of labor and delivery. Subjects were asked to rate their perception of their labor and delivery experience in one of three categories: worse than expected; as expected; and better than expected. More subjects in both groups found the experience worse than expected. Chi square analysis revealed no significant difference between the experimental and control groups on labor and delivery experience.

Readiness for discharge. At M1, mothers were asked if they felt ready to go home. At M2, they were asked if they were happy about their early hospital discharge. No significant difference was found between the experimental and control groups at each questionnaire administration but Chi square analysis revealed a significant decrease within each group between the first and second measurements in the number of subjects who felt that they had been ready for discharge (see Table 6). There were fewer subjects in the control group who were happy with their discharge time at M2 than there were in the experimental group, perhaps because the experimental group mothers had frequent contact with the researcher in the week after discharge.

Table 6 Subjects' Feelings about Readiness for Discharge
Chi square for difference between & within Experimental & Control Groups at 1st & 2nd questionnaire administrations

Group	Admin.	N	Satisfied with discharge time	Not satisfied with discharge time	NR	χ^2	df	p(0.05)
Exper.	M1	50	44 (88%)	6 (12%)	0	0.08	1	.776
Control	M1	49	44 (89.8%)	5 (10.2%)	0			
Exper.	M2	47	36 (76.6%)	10 (21.3%)	1	3.55	1	.314
Control	M2	45	30 (68.2%)	11 (25%)	4			
Exper.	M1	50	44	6	0	140.97	4	.000 *
Exper.	M2	47	36	10	1			
Control	M1	49	44	5	0	143.66	6	.000 *
Control	M2	45	30	11	4			

* significant NR = No response

This is not surprising. In hospital they were eager to go home with their babies. At their time of discharge, they were still recovering from their labor and delivery experience, and were not yet actively taking care of their babies, nor were their babies demanding a lot of feeding or attention. Two weeks later, reality had set in. The mothers had become aware of the responsibility of caring for their babies 24 hours a day, and were experiencing constant infant demands while still recovering physically from childbirth, and coping with fatigue.

Chi square analysis was also performed to see if subjects who had experienced a difficult labor or had an episiotomy felt ready to go home when they did. At M1 and M2, no significant difference was found between the subjects who experienced a labor worse than expected and those who did not in relation to readiness for discharge. Similarly, no significant difference was found between subjects who had an episiotomy and those who did not in relation to readiness for discharge.

Comments regarding early discharge. At M2, subjects were asked the reasons why they were happy or not happy about their discharge time. Mothers who were happy to go home early gave the following reasons: not able to rest in hospital (3); able to relax more at home (1); good support at home (1); lack of care by nurses in hospital (2); and inconsistent information from nurses (1). Reasons why mothers were not happy to go home early included: very tired and not feeling well (10); needed more time for teaching, felt rushed (9); needed longer to recover (7); in pain, stitches sore (5); concerned about baby (5); felt pressured, not ready mentally or physically (3); felt intimidated, not adjusted to breastfeeding, not confident, should be mother's choice (1 each). A few mothers commented that the length of hospital stay should be at least 48 hours, or that mothers should be able to decide when they should be discharged. Nursing staff had concerns about only two mothers at hospital discharge. Both subjects were in the control group and the concern each time was problem with breastfeeding. These will be discussed with infant feeding.

Help at home. In Table 7 the sources of help mothers had available after discharge from hospital is shown. Categories were not mutually exclusive and subjects were able to list all the sources that were available to them. Almost all mothers had some help, with their husband/partner and mother being the chief sources of help. Subjects in both the experimental and the control group had a similar number of sources of help. However, it is noteworthy that only 69 of the 99 subjects listed their husband or partner as a source of help. There are three possible explanations for this. First, the subjects automatically accepted that their husband was a source of help and therefore did not include him. Second, perhaps they truly did not feel that he was helpful. Third, the husbands may have been working outside the home and were not physically present to provide help.

Table 7 Mother's Sources of Help at Home after Hospital Discharge

Group	Admin.	Husband/ Partner	Mother	Mother -in-law	Sister	Other	No help	Total Sources of help	Mean
Exper. (n=50)	M1	34	27	12	5	2	3	80	1.6
Control (n=49)	M1	35	21	6	8	7	0	77	1.57

Experience with baby since discharge. At M2 and M3 subjects were asked to describe their experience with their baby since the last measurement. Three categories were used: easier than expected; as expected; more difficult than expected. Chi square analysis revealed there was no significant difference between the experimental and the control groups regarding experience with baby but there was a significant difference within each group between M2 and M3 (see Table E-2, Appendix E). The experience became easier over time, as mothers were more familiar with their babies, and gained confidence in their care taking knowledge and abilities.

Self care information received. At each questionnaire administration, subjects were asked if they felt they had received enough information on self care in hospital prior to discharge. Chi square analysis revealed there was no significant difference at each time period between the experimental and control groups on information about self care received, although there was a decrease in the number of subjects in each group who answered positively at M2 (see Table 8).

Table 8 Adequacy of Information Received about Self Care in Hospital
Chi square for difference between and within Experimental & Control Groups at each questionnaire administration

Group	Admin.	Yes	No	χ^2	df	p(0.05)
Exper.	M1	38 (76%)	12 (24%)	0.08	1	.772
Control	M1	36 (73.5%)	13 (26.5%)			
Exper.	M2	29 (61.7%)	18 (38.3%)	0.15	1	.701
Control	M2	26 (57.8%)	19 (42.2%)			
Exper.	M3	36 (78.3%)	10 (21.7%)	1.32	1	.250
Control	M3	29 (67.4%)	14 (32.6%)			
Exper.	M1	38	12			
Exper.	M2	29	18	3.77	2	.152
Exper.	M3	36	10			
Control	M1	36	13			
Control	M2	26	19	2.62	2	.270
Control	M3	29	14			

This probably reflects the fatigue, low maternal feelings, and increased concerns felt by new mothers two weeks after childbirth. The subsequent rise in subjects who answered positively at M3, particularly in the experimental group, reflects more positive feelings at the end of the six week period. The larger positive response for subjects in the experimental group possibly reflects the contact the mothers had with the researcher after discharge. Many mothers felt the information received in hospital about self care was adequate, particularly in light of the workload of the nursing staff, and the short hospital stay. At each time period, the information that mothers felt they did not receive reflected problems they were experiencing at the time.

The most common items for which information was not received are listed in Table 9. Frequencies in parentheses are not mutually exclusive, as some subjects may have listed several items. Mothers in both groups had similar responses. It is interesting to note that the number of mothers who felt they did not receive any information doubled from M1 to M2. This possibly reflects the mother's state of readiness to learn, information overload in the first few days after birth, or the fatigue and stress the mother experiences in the first two weeks after hospital discharge.

Table 9 Mothers' Perceptions at each questionnaire administration of Information about Self Care not received in Hospital

M1	M2	M3
Breastfeeding info. (14)	"No information received" (10)	Breastfeeding (6)
Perineal care (7)	Perineal healing/stitches (10)	Time management (6)
"No information received"(5)	Vaginal flow/clots (9)	Vaginal flow (3)
Care of haemorrhoids (2)	Breast changes & care (7)	Resumption of sexual intercourse (2)
Feelings/emotions (2)	Postpartum recovery/activity/exercise (5)	
Vaginal flow/involution (2)		

Self care problems after discharge. Subjects were asked if they had any self care problems after discharge from hospital, and if so, what were they. Most mothers identified only one self care problem. Chi square analysis revealed there was no significant difference between experimental and control groups on the incidence of self care problems, but there was a significant decrease within each group between M2 and M3 as the physical complications after childbirth were resolved by two weeks postpartum (see Table 10).

Only one mother was rehospitalized in the first week after discharge from hospital for a problem with self care, a postpartum hemorrhage. The most common self care problems identified were: sore breasts and nipples (11); vaginal flow (8); extreme tiredness (8); hemorrhoids (7); insufficient time for rest (7); sore perineum (5); infection - perineal (2), urinary (4). The most frequent problems reported at M3 were: infection - perineal (4), urinary (2); breastfeeding (5); hemorrhoids (4); tiredness (4). Two problems remained constant over the six weeks: hemorrhoids and tiredness.

Table 10 Problems with Self Care after Hospital Discharge Frequencies and Chi square for difference between and within Experimental & Control groups at 2nd and 3rd questionnaire administrations

Group	Admin.	Yes	No	χ^2	df	p(0.05)
Exper.	M2	21 (47.8%)	26 (52.2%)	0.38	1	.537
Control	M2	23 (51.1%)	22 (48.9%)			
Exper.	M3	10 (21.7%)	36 (78.3%)	1.90	1	.168
Control	M3	15 (34.9%)	28 (65.1%)			
Exper.	M2	21	26	151.47	4	.000 *
Exper.	M3	10	36			
Control	M2	23	22	140.67	4	.000 *
Control	M3	15	28			

* Significant

Action taken for self care problems. Subjects were asked to identify what action they took to deal with their self care problems. More than one resource was used by some mothers to deal with a problem. The actions taken by subjects to deal with problems at M2 and M3 are shown in Table 11. Subjects used appropriate resources for problem solving. Doctors and nurses were contacted for physical complications. In the first week after discharge, the experimental group subjects talked to the researcher through daily telephone calls, and subjects in both groups had at least one visit from the community health nurse, with further visits or telephone calls made by the nurse if necessary. At M2, both of these resources were cited as being frequently used.

Table 11 Actions taken for Problems with Self Care Frequencies for Experimental and Control Groups

Group	Admin.	Warm line	Dr	CHN	R/F	Emer.	None	Res.	Total
Exper.	M2	1	10	8	5	1	2	9	36
Control	M2	1	11	11	9	2	3	-	37
Exper.	M3	0	5	2	2	2	2	3	16
Control	M3	0	8	3	5	1	0	-	17

Warm Line = Called hospital warm line
DR = Contacted/visited doctor
CHN = Contacted community health nurse
R/F = Contacted relative/friend
Emer. = Went to Emergency
Res. = Called researcher

Infant demographic and biographic data

There was no significant difference in gender and birthweight of infants in the experimental and control groups. There were more male infants in both groups (see Table E-1, Appendix E), which is consistent with the normal birth rate.

Type of feeding. In Table 12 the method used to feed the babies at M1, M2, and M3 is reported. There was no significant difference between the experimental and control groups on infant feeding, but there was a significant decrease in the number of mothers totally breastfeeding within each group at each time period, particularly between M2 and M3. Staff had concerns about the breastfeeding of two babies prior to discharge from hospital. Both mothers were in the control group. One mother/baby dyad continued to have difficulty with breastfeeding due to flat nipples, but at M2 and M3 the mother was pumping breastmilk at each feed to give to her baby by bottle. The other mother was feeding part breast/part bottle on discharge, but had changed to total bottlefeeding by M2.

Table 12 Type of infant feeding at each questionnaire administration Chi square for differences between and within Experimental & Control Groups

Group	Admin.	Breast	Bottle	Breast/Bottle	χ^2	df	p(0.05)
Exper.	M1	41 (82%)	4 (8%)	5 (10%)	.639	2	.726
Control	M1	37 (75.5%)	5 (10.2%)	7 (14.3%)			
Exper.	M2	36 (76.6%)	5 (10.6%)	6 (12.8%)	.93	2	.628
Control	M2	31 (68.9%)	5 (11.1%)	9 (20%)			
Exper.	M3	26 (56.5%)	9 (19.6%)	11(23.9%)	.85	2	.654
Control	M3	21 (48.8%)	8 (18.6%)	14(32.6%)			
Exper.	M1	41	4	5			
Exper.	M2	36	5	6	149.48	6	.000 *
Exper.	M3	26	9	11			
Control	M1	37	5	7			
Control	M2	31	5	9	142.69	6	.000 *
Control	M3	21	8	14			

* significant

Jaundice. On discharge from hospital, 38 infants (38.4%) exhibited signs of neonatal jaundice, with 21 of those being in the experimental group, and 17 in the control group. Chi square analysis for difference between the experimental and control groups found no significant difference ($\chi^2 = 0.56$ (1df), p = 0.455). Two babies were rehospitalized after discharge for phototherapy treatment for hyperbilirubinaemia, one from each group.

Circumcision. Twenty six (26) of the 53 male infants (49%) were circumcised prior to discharge. Of those 14 were in the experimental group, and 12 were in the control group. Chi square analysis for difference between the groups was not significantly different ($\chi^2 = 0.83$ (2df), p = 0.662).

Information about baby received. Subjects were asked if they felt they had received enough information in hospital about caring for their baby. At each time period, there were fewer subjects who felt that they had received adequate information about baby in hospital. Chi square analysis showed that there was no significant difference at each questionnaire administration between the experimental and control groups on information received about baby care (see Table 13).

Table 13 Adequacy of Information Received about Baby in Hospital
Chi square for difference between and within Experimental
& Control Groups at each questionnaire administration

Group	Admin.	Yes	No	χ^2	df	p(0.05)
Exper.	M1	37 (74%)	13 (26%)	0.00	1	.952
Control	M1	36 (73.5%)	13 (26.5%)			
Exper.	M2	29 (61.7%)	17 (36.2%)	0.15	1	.928
Control	M2	26 (57.8%)	18 (40%)			
Exper.	M3	30 (65.2%)	16 (34.8%)	2.58	1	.276
Control	M3	22 (51.2%)	20 (46.5%)			
Exper.	M1	37	13			
Exper.	M2	29	17	3.55	4	.471
Exper.	M3	30	16			
Control	M1	36	13			
Control	M2	26	18	5.71	4	.222
Control	M3	22	20			

The decrease in the number of mothers who felt they had received adequate information at M2 probably reflects the mothers' fatigue and low feelings two weeks after birth. In Table 14 the most common baby care items for which subjects felt they did not receive adequate information are listed. Frequencies in parentheses are not mutually exclusive as some subjects listed more than one item.

Table 14 Mothers' Perceptions at each questionnaire administration of Information about Baby not received in Hospital

M1	M2	M3
Breastfeeding (16)	Breastfeeding (21)	Breastfeeding (7)
Bathing baby (8)	Care of cord (6)	Bowel movements (7)
'No information received' (5)	Bathing baby (5)	'Little info. received' (6)
Cord care (2)	'No information received' (4)	Colic (5)
Cutting nails (2)	Bottlefeeding (3)	Sleep patterns (4)
Diaper changes (2)	Sleep patterns (3)	Signs of illness (4)

Mothers in both the experimental and control groups had similar responses about what information was lacking. The items listed at M1 and M2 reflect concerns about infant care skills, which is the main focus for new mothers in the first two weeks after birth. Items listed at M3 focus more on infant behavior which is of more concern at six weeks postpartum. It is interesting to note the number of mothers who felt that they did not receive adequate information about breastfeeding at each time period, indicating that breastfeeding is a continuing concern for some mothers six weeks after birth.

Problems with baby after discharge. Subjects were asked what problems they had experienced with baby after discharge from hospital (see Table 15).

Table 15 Problems with Baby after Hospital Discharge
Frequencies and Chi square for differences between and within Experimental & Control groups at 2nd & 3rd questionnaire administrations

Group	Admin.	Yes	No	χ^2	df	p(0.05)
Exper.	M2	28 (59.6%)	19 (40.4%)	0.36	1	.546
Control	M2	24 (53.3%)	21 (46.7%)			
Exper.	M3	24 (52.2%)	22 (47.8%)	1.43	1	.232
Control	M3	17 (39.5%)	26 (60.5%)			
Exper.	M2	28	19	143.79	4	.000 *
Exper.	M3	24	22			
Control	M2	24	21	139.62	4	.000 *
Control	M3	17	26			

* Significant

Chi square analysis revealed there was a significant decrease in problems identified over time in both the experimental and control groups. The main problems experienced with baby were a mix of medical problems and behavioral concerns. At M2 the problems were: breastfeeding (7); discharge from cord (7); bowel movements (6); neonatal jaundice (6); fussiness (6); breathing problems (5); mucousy baby (5). Problems at M3 were: bowel movements (8); breastfeeding (8); colic (8); regurgitation and vomiting (5); crying (5); and thrush(4). During the first two days at home, three babies were rehospitalized, one for tests and antibiotic treatment of an undiagnosed illness and the other two for hyperbilirubinaemia.

Action taken for problems with baby. In Table 16 the resources mothers used to deal with problems with their babies are shown. Most mothers mentioned only one problem. More than one resource was used by some mothers to deal with the problem. Subjects accessed the most readily available resources at the time and used appropriate resources for the problems. Experimental group subjects accessed more resources than subjects in the control group but they also identified more problems, perhaps reflecting sensitization to potential problems through contact with the researcher.

Table 16 Action taken for Problems with Baby
Frequencies for Experimental and Control Groups

Group	Admin.	Warm Line	DR	CHN	R/F	Emer.	None	Res.	Total
Exper.	M2	1	15	13	7	2	3	7	48
Control	M2	2	7	14	9	1	1	-	34
Exper.	M3	1	17	12	5	1	1	2	39
Control	M3	0	12	9	7	0	0	-	28

Warm Line = Called hospital warm line
CHN = Contacted community health nurse
DR = Contacted/visited doctor
R/F = Contacted relative/friend
Emer. = Went to Emergency
Res. = Called researcher

MATERNAL CONCERNS

Hypothesis #1. New mothers who are telephoned daily by a nurse after early hospital discharge will have fewer concerns than will control group mothers

Hypothesis #2. New mothers who are telephoned daily by a nurse after early hospital discharge will have less intense concerns than will control group mothers

At each questionnaire administration, subjects were asked to indicate their degree of concern about self care, baby care, and personal and family adjustment dependent variables on a 7-point Likert scale where 1 meant no confidence and 7 indicated great confidence. The data were analyzed using repeated measures analysis of variance for interaction and main effects of the independent variables, group and time, as well as for differences between and within the experimental and control groups. The means of the items were also examined for intensity of concern. The frequency of response for each item was calulated. Any item checked as 'not applicable' was excluded from the analysis. The frequencies were next divided into three categories: high concern (scores of 6-7 on the Likert scale); medium concern (scores of 4-5); and low concern (scores of 2-3), and the frequencies within each category for each group were calculated using Chi square. The high and low concerns within each group were rank ordered and are listed in Tables E-3 and E-4 (see Appendix E).

Concerns about self care

Repeated measures analysis of variance showed there were no significant interactions of group and time on any of the self care dependent variables (see Table E-5, Appendix E). There was no significant difference between the experimental and control groups on any self care dependent variables. There was a main effect of time within each group with significant decreases in the means of most dependent variables over consecutive time periods (see Table E-6, Appendix E).

Intensity of concern. The intensity of concern about self care decreased over time as mothers recovered from the physical complications of childbirth. The experimental group subjects had less intense concerns overall. The most intense self care concerns at M1 were 'hemorrhoids' in the experimental group, and 'becoming tired' and 'perineum' in the control group. At M2, the most intense concern for both groups was 'becoming tired', when mothers were suffering from pervasive fatigue. At M3 'getting figure back' was the most intense, reflecting the mothers' concern about body image and regaining their figures.

Frequency of concerns. The frequency distributions of high and low self care concerns for the experimental and control groups at the three time periods are displayed in Figures F-1 & F-2 and Figures F-3 & F-4 (see Appendix F). Chi square analysis showed no significant difference in the categories of high or low concerns between the two groups. The number of high concerns about self care decreased over time. Subjects in the control group had more high concerns at M2. Experimental group mothers had frequent contact with the researcher before M2 which may have reduced their degree of concern. The most frequent high concerns were 'breasts', 'bowel movements', 'becoming tired', and 'getting figure back' at each measurement. There were far more low concerns about self care than high concerns. The number of low concerns increased at M2 with a subsequent decrease at M3. The experimental group subjects had more low concerns overall, possibly reflecting sensitization to potential problems through contact with the researcher. The most frequent low concerns were: 'vaginal flow' and 'breasts' at M1; 'vaginal flow' and 'perineum' at M2; and 'getting figure back' and 'postnatal exercises' at M3.

The variable 'getting figure back' was examined in relation to age with the categories: under 20 years; 20 to 29 years; and over 30 years. Chi square analysis showed a significant difference between age categories at M1 and M3 (χ^2 = 25.48 (12df), p = 0.012 at M1; χ^2 = 25.25 (12df), p = 0.013 at M3) but not at M2. Immediately after childbirth, and at six weeks postpartum, subjects in the 20 to 29 year age group were more concerned about getting their figures back than were subjects in the other two age categories. In the first two weeks postpartum recovery from childbirth and learning to take care of their infants appeared to be foremost on mothers' minds. However at six weeks postpartum, when mothers had recovered from childbirth and had become more comfortable caring for their babies, getting their figures back was a major concern.

Concerns about baby

Repeated measures analysis of variance revealed a significant interaction for the dependent variable 'care of circumcision' indicating a treatment effect for the experimental group mothers of boys who were circumcised (see Table E-7, Appendix E). These mothers were able to seek information from the researcher through telephone calls which significantly decreased their concerns about the care of their babies' circumcisions. No significant differences in concern about baby dependent variables were found between the two groups. There was a main effect of time within the experimental and control groups with significant decreases in intensity of concern on almost all the baby dependent variables reflected by a decrease in the means of the variables on consecutive measurements (see Table E-8, Appendix E).

Intensity of concerns. The decrease in intensity of concerns over time was expected as mothers became attuned to their babies, more skilled in infant care, and more confident in their mothering and infant care ability. Subjects in the experimental group had less intense concerns related to their babies at each time period. The most intense concerns were 'breastfeeding' at M1 and M2, as mothers were establishing breastfeeding, and 'skin' and 'infant behavior' at M2 and M3.

Frequency of concerns. The frequency distributions of high and low baby concerns for the experimental and control groups at each time period are displayed in Figures F-5 & F-6 and Figures F-7 & F-8 (see Appendix F). Chi square analysis of the categories revealed a significant difference between the experimental and control groups at M1 on one dependent variable, 'breastfeeding', with subjects in the control group having more concerns about breastfeeding ($\chi^2 = 6.88$ (2df), $p = 0.032$). As the subjects were not assigned to groups at M1, this difference is assumed to be a chance occurrence.

The number of high concerns about baby decreased over time with subjects in the control group having more high concerns. The frequent contact that experimental group mothers had with the researcher between M1 and M2 may have been a factor in the fewer high concerns in that group. The most frequent high concerns were: 'breastfeeding', 'sleep patterns', 'crying', and 'infant behavior'. There were more low baby concerns about high baby concerns. The number of low baby concerns increased at M2 as mothers were learning how to care for their babies, and decreased at M3 as mothers became more knowledgeable about their babies. Experimental group mothers had more low concerns overall than did control group mothers, possibly reflecting sensitization to potential problems through contact with the researcher. The most frequent low baby concerns were: 'skin' and 'wet diapers' at M1; 'crying' and 'weight gain' at M2' and 'crying' and 'infant behavior' at M3. It is interesting to note that while 'crying' was listed as one of the most frequent high concerns at M2 and M3, it was also one of the most frequent low concerns at the same time periods. While most mothers stated 'crying' was a concern, they did not all regard it as a high concern.

Concerns about personal and family adjustment

Repeated measures analysis of variance revealed no significant interaction effects of group and time on any of the dependent adjustment variables (see Table E-9, Appendix E). A significant difference was found between the experimental and control groups on the adjustment dependent variable 'fitting baby into the family'. Subjects in the experimental group had lower mean scores at each time period (see Table E-10, Appendix E). There was a main effect of time for all adjustment dependent variables except 'family planning'. The intensity of concern related to the dependent variables 'fitting baby into family' and 'emotional changes', reflected by their means, decreased over time as mothers became adjusted to having a baby in the family. The intensity of concern about 'sexual intercourse' rose over time as sexual relations were resumed. Mothers would likely have sought information on this topic at the six week post natal medical check. The most intense adjustment concerns overall, were 'fitting baby into the family' and 'emotional changes'.

Frequency of concerns. The frequency distributions of high and low adjustment concerns respectively within the experimental and control groups at each questionnaire administration are displayed in Figures F-9 & F-10, and Figures F-11 & F-12 (see Appendix F). Chi square analysis of the categories revealed a significant difference between the groups at M2 on the dependent variable 'emotional changes', with subjects in the control group having more high concerns (χ^2 = 6.15 (2df), p = 0.046). There was also a significant difference in the number of high concerns related to 'sexual intercourse' between the groups at M1, with the control group having fewer concerns (χ^2 = 7.72 (2df), p = 0.021). As this occurred prior to group assignment it is assumed to be a chance occurrence.

Subjects in the control group had more high adjustment concerns overall, particularly at M2. The fewer high concerns within the experimental group was most likely due to contact with the researcher in the week after hospital discharge. The number of high concerns related to 'fitting baby into family' and 'family planning' decreased over time within the experimental and control groups. The most frequent high concerns were 'fitting baby into family' and 'emotional changes' at all measurement periods. The number of low concerns increased over time on all dependent variables as mothers became more comfortable with the adjustment to motherhood. The subjects in the experimental group had more low adjustment concerns overall. Contact with the researcher may have sensitized them to potential problems. The most frequent low concerns were 'fitting baby into family' and 'emotional changes' with the experimental group reporting these more frequently than the control group.

Conclusion about Hypothesis #1. Contrary to expectations, subjects in the experimental group did not have fewer concerns than subjects in the control group, therefore hypothesis #1 cannot be accepted.

Conclusion about Hypothesis #2. Contrary to expectations, subjects in the experimental group did not have significantly less intense concerns than subjects in the control group, therefore hypothesis #2 cannot be accepted.

INFORMATION SOUGHT

Hypothesis #3. New mothers who are telephoned daily by a nurse after early hospital discharge will seek less information than will control group mothers.

The dependent variable 'information sought' was examined in relation to maternal concerns about self care, baby, and personal and family adjustment. Subjects were asked if they had sought any information on each item on the concerns scale. The dichotomous data (yes or no) were analyzed using Chi square for differences between the experimental and the control groups. Subjects in both groups had similar patterns of information seeking related to all dependent variables. Mothers recorded a large amount of information seeking at M1, which reflected their reading and attendance at prenatal classes during pregnancy as well as their current concerns. The information sought at M2 and M3 was related to problems and concerns experienced at the time the scale was completed. Information seeking decreased over time within both groups.

Information sought for self care concerns

As the physical complications from childbirth were resolved, concerns about self care decreased. The frequency distributions for information sought on self care dependent variables in the experimental and control groups are shown in Figures 4 & 5. Chi square analysis of the categories within each group for information sought revealed similar significant differences over time on most dependent variables (see Tables E-11 & E-12, Appendix E). There was no significant difference in information sought on any self care dependent variables between the experimental and control groups.

Figure 4

Information Sought for Self Concerns
Experimental Group

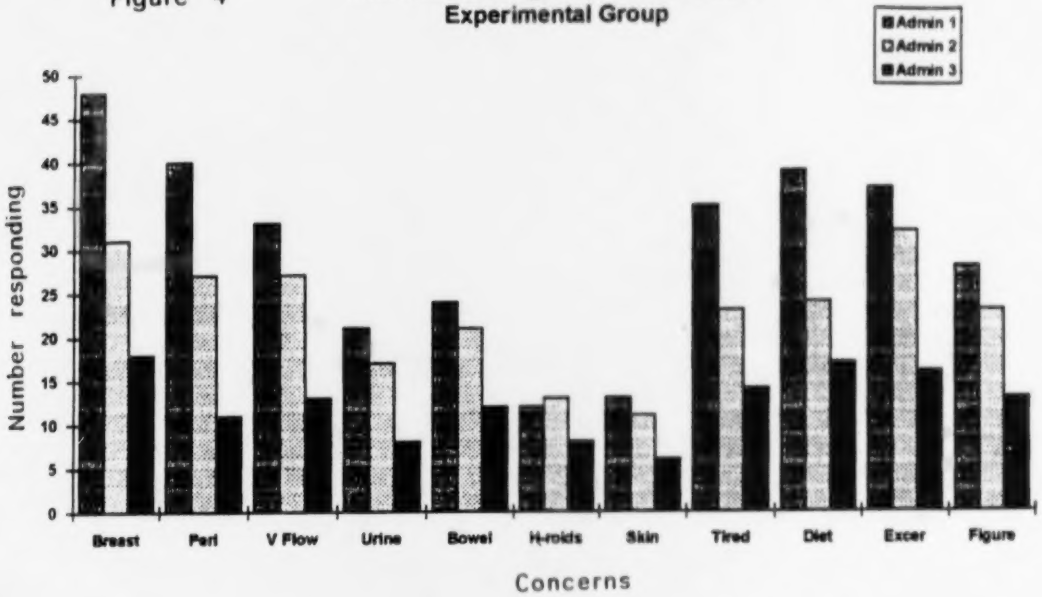
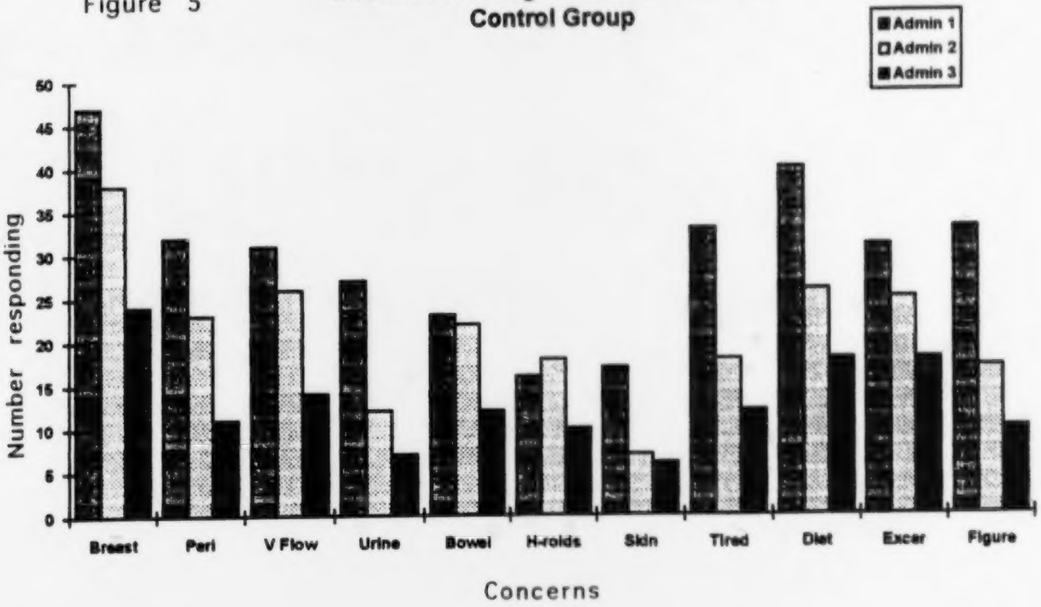


Figure 5

Information Sought for Self Concerns
Control Group



Information sought for baby concerns

The frequency distributions for information sought about baby concerns for the experimental and control groups are displayed in Figures 6 & 7. Chi square analysis of the categories within each group revealed that as mothers became more attuned to their babies there were similar significant decreases over time on information sought for most baby concerns (see Tables E-13 & E-14, Appendix E). Information sought about 'bottlefeeding' increased significantly within both groups at M2 and did not decrease at M3. This is probably because of the increasing number of mothers who stopped breastfeeding and started bottlefeeding at M2 and M3. Subjects in the experimental group sought less information about 'jaundice' than subjects in the control group even though there were more jaundiced babies in the experimental group. The experimental group mothers were able to obtain information about jaundice from the researcher during the daily telephone calls, and did not have to actively seek information from another source.

Chi square analysis of the categories of information sought revealed a significant difference at M3 between the experimental and control groups for information sought on the dependent variable 'infant safety' ($\chi^2 = 4.86$ (1df), $p = 0.027$). At six weeks after childbirth, subjects in the control group sought more information about 'infant safety' than did subjects in the experimental group. The reason for this is not clear as the item was not addressed during the daily telephone calls. It is likely a chance occurrence.

Information sought for concerns about personal and family adjustment

The frequency distributions of information sought for the experimental and control groups are shown in Figures 8 & 9. There were

Figure 6

Information Sought for Baby Concerns
Experimental Group

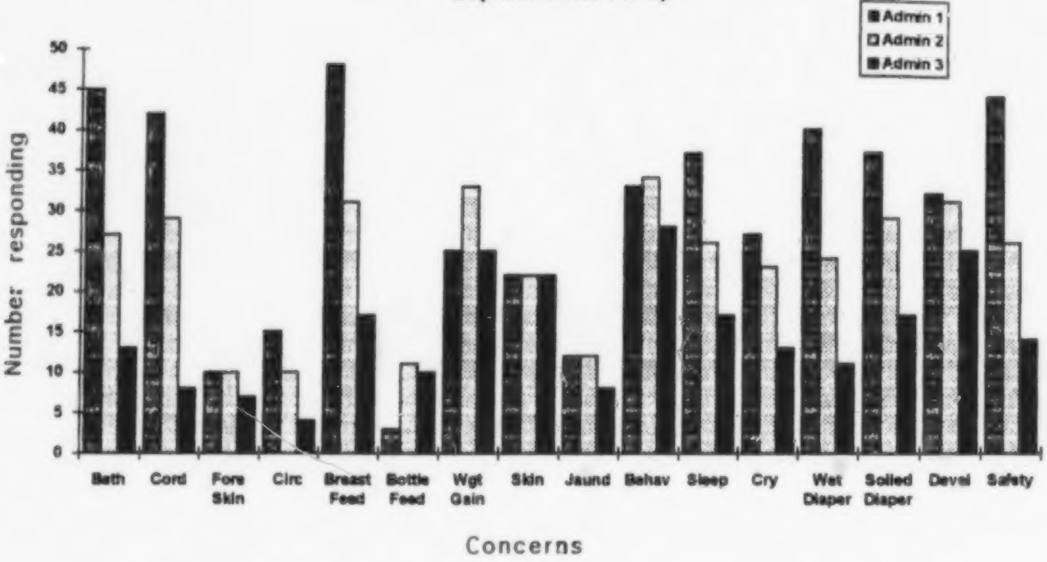


Figure 7

Information Sought for Baby Concerns
Control Group

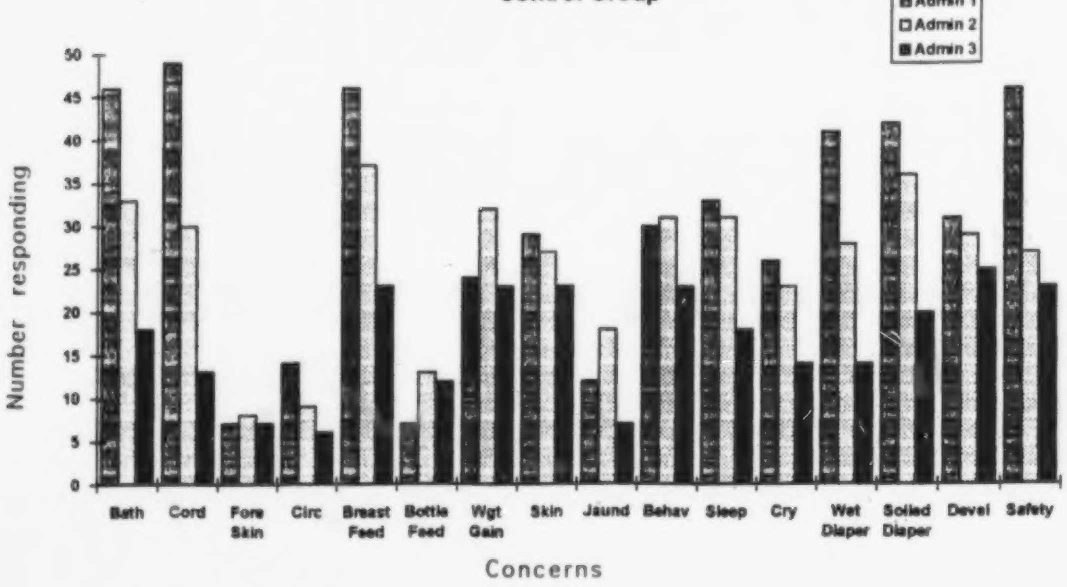


Figure 8 **Information Sought for Adjustment Concerns**
Experimental Group

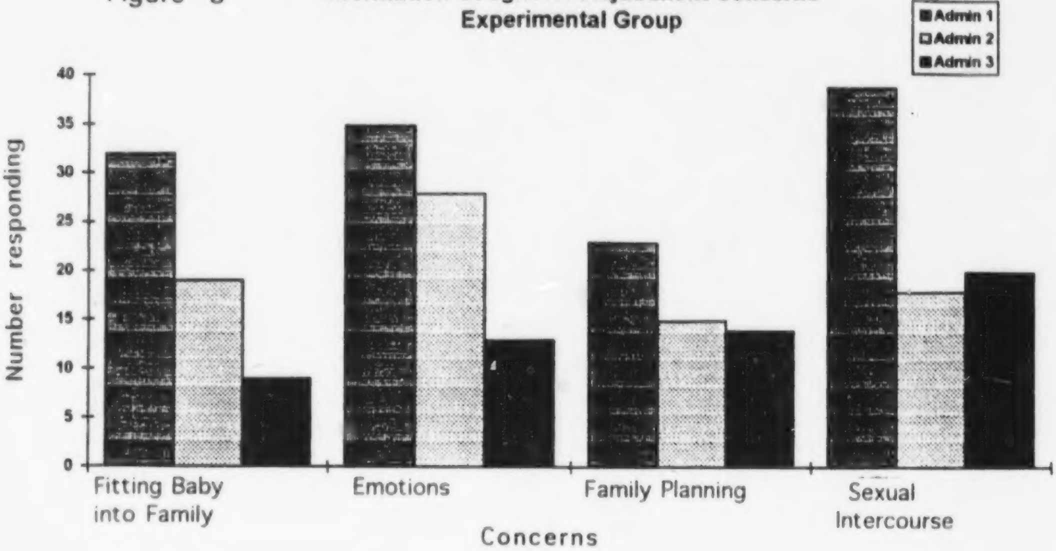
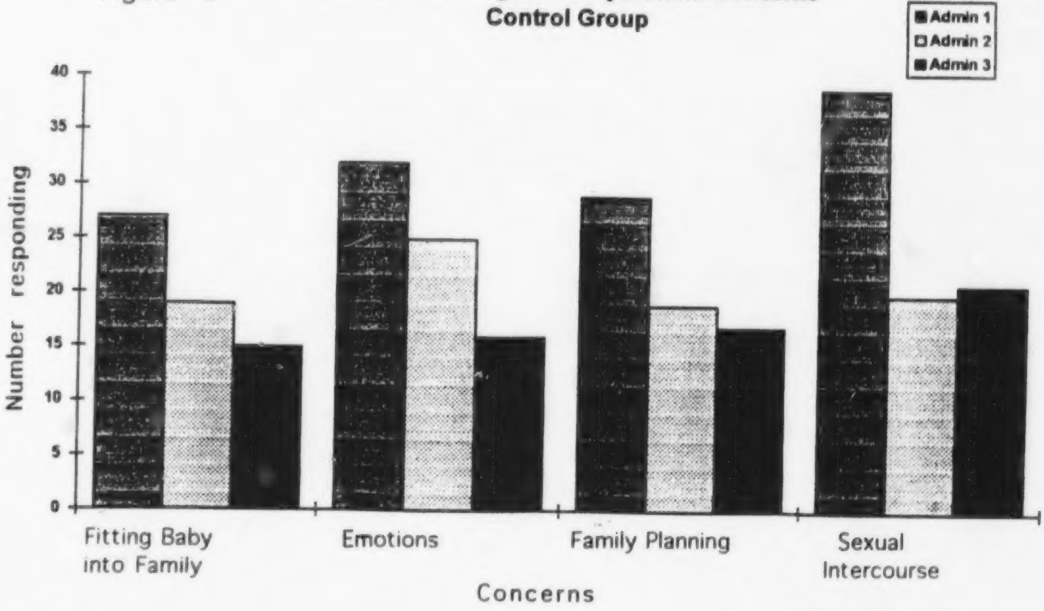


Figure 9 **Information Sought for Adjustment Concerns**
Control Group



similar patterns of information seeking in both groups: information sought about 'fitting baby into the family' and 'emotional changes' decreased over time, but information sought about 'family planning' and 'sexual intercourse' increased as there were increased concerns about resumption of sexual activity between two and six weeks after childbirth (see Tables E-12 & E-13, Appendix E). Chi square analysis of the categories of information sought within each group revealed that there were more significant differences within the experimental group than in the control group. Information sought on 'fitting baby into the family' significantly decreased over time in the experimental group but not in the control group, most likely reflecting the contact experimental group mothers had with the researcher after discharge from hospital. There was no significant difference between the experimental and control groups on any adjustment dependent variable.

Conclusion about Hypothesis #3. Contrary to expectations, there was no significant difference in information sought between the experimental and control groups, therefore hypothesis #3 cannot be accepted.

SOURCES OF INFORMATION

At each questionnaire administration, subjects were asked to indicate all resources they used to obtain information relating to concerns about self care, baby, and personal and family adjustment dependent variables. The choices were Nurse, Doctor, Relative, Friend, Book, or Other (including prenatal classes). Categories were not mutually exclusive. The frequency distributions were rank ordered for sources of information, and to find out which information sources were used in relation to specific concerns (see Table 17). The data were analyzed using Chi square for differences within and between the experimental and control groups at each time period.

Often multiple sources were accessed to obtain information about dependent variables. This was particularly evident at M1, when subjects listed current sources of information, as well as books they had read and prenatal classes attended during pregnancy. Subjects in both the experimental and control groups used similar resources for information related to their concerns. Resources most commonly used were those most accessible at the time, or those most appropriate for the concern. Books were the most frequently used source of information, particularly by subjects in the experimental group. Nurses were the next most frequent source for self care and baby concerns at all time periods. As the availability of nurses decreased after M2, doctors were contacted more frequently for self and baby concerns. There was an overall decrease in sources of information used over time, and the resources used for specific concerns changed over time.

Sources of information for self care concerns

The frequency distributions of sources of information related to self care concerns that were accessed by subjects in the experimental and control groups at each time period are shown in Table 18. Patterns of accessing sources of information were similar between the two groups. As the need for information about physical complications and physiological changes decreased there was an increase in the sources contacted for information related to maintaining energy and body image: 'becoming tired, diet/nutrition',' getting figure back', and 'prenatal exercises'. Nurses were contacted most often for information related to physical concerns, while books were most often used for information about maintaining energy and getting the figure back. Prenatal classes were an important source of information

Table 17 Rank order of frequencies for which sources of information were accessed for concerns at each questionnaire administration

Concerns	M1				M2				M3			
	Exper. Gp (n=50)		Control Gp (n=49)		Exper. Gp (n=47)		Control Gp (n=45)		Exper. Gp (n=46)		Control Gp (n=43)	
	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank
Self concerns												
Breasts	112	1	122	1	72	1	84	1	48	1	53	1
Perineum	60	4	46	5	49	3	41	3	21	4	17	7
Vaginal flow	49	6	53	3	43	5	50	2	21	4	22	3
Passing urine	25	9	37	6	25	9	24	8	13	7	15	8
Bowel Movements	26	8	29	7	29	8	38	4	20	5	19	5
Hemorrhoids	19	10	20	9	21	10	30	7	13	7	17	7
Changes in skin/hair	14	11	20	9	10	11	16	9	10	8	8	10
Becoming tired	62	3	53	3	50	2	38	4	26	3	18	6
Diet/Nutrition	66	2	73	2	41	6	37	5	28	2	21	4
Postnatal exercises	53	5	28	8	47	4	50	2	26	3	28	2
Getting figure back	45	7	51	4	35	7	34	6	19	6	12	9
Baby concerns												
Bathing	60	6	61	6	53	6	66	5	24	10	33	8
Care of cord	63	5	62	5	60	4	59	7	21	11	24	10
Care of foreskin	15	12	10	14	15	12	14	15	9	14	11	12
Care of circumcision	23	10	21	12	20	11	16	14	12	13	9	13
Breastfeeding	132	1	131	1	83	1	93	1	48	4	55	1
Bottlefeeding	5	13	13	13	22	10	21	13	38	8	22	11
Weight gain	42	8	42	11	55	5	54	9	49	3	32	9
Skin	45	7	50	9	34	9	54	9	48	4	46	4
Jaundice	19	11	13	13	22	10	26	12	17	12	8	14
Behaviour	63	7	59	7	80	2	72	4	67	1	49	3
Sleep patterns	75	3	61	6	58	5	73	3	39	5	41	6
Crying	39	9	43	10	37	2	47	11	25	9	22	11
Wet diapers	66	4	77	3	54	6	58	8	25	9	32	9
Soiled diapers	66	4	74	4	64	3	78	2	34	6	42	5
Normal development	60	6	58	8	53	7	60	6	59	2	50	2
Infant safety	84	2	89	2	43	8	51	10	31	7	35	7
Adjustment concerns												
Fitting baby into family	59	3	46	4	31	2	37	3	23	2	25	4
Emotional changes	71	1	48	3	55	1	48	1	31	1	27	3
Family planning	59	3	51	2	19	4	38	2	22	3	28	2
Sexual intercourse	63	2	60	1	26	3	31	4	31	1	30	1

Table 18 Sources of Information Used for Self Care Concerns - Frequencies

Experimental Group

	M1 (n = 50)						M2 (n = 47)						M3 (n = 46)					
Variable	N	D	R	F	B	O	N	D	R	F	B	O	N	D	R	F	B	O
1.Breasts	31	7	7	9	32	26	22	3	7	11	23	6	9	8	3	8	15	5
2.Perineum	33	15	0	0	9	3	21	8	3	2	12	3	8	5	0	1	4	3
3.Vaginal flow	18	9	2	0	15	5	12	6	2	2	19	2	2	10	0	0	7	2
4.Passing urine	18	2	1	1	2	1	10	3	1	2	7	2	5	2	0	1	4	1
5.Bowel movements	12	6	1	0	6	1	13	2	2	0	10	2	9	4	0	2	4	1
6.Hemorrhoids	11	4	1	1	1	1	6	4	1	1	8	1	4	4	0	1	3	1
7.Changes skin/hair	0	0	1	1	9	3	1	1	0	1	6	1	1	2	0	2	4	1
8.Becoming tired	8	4	10	5	24	11	12	3	10	11	12	2	3	1	5	8	7	2
9.Diet/nutrition	4	4	4	4	29	21	8	4	3	2	18	6	4	3	2	4	11	4
10.Postnatal exercises	2	1	1	1	28	20	9	1	0	4	26	7	4	2	0	1	13	6
11.Getting figure back	0	0	4	4	23	14	3	0	1	5	21	5	1	0	0	2	12	4
Total in category	137	52	32	26	178	106	117	35	30	41	162	37	50	41	10	30	74	30
Total sources accessed	531 (mean = 10.62)						422 (mean = 8.98)						235 (mean = 5.11)					

Control group

	M1 (n = 49)						M2 (n = 45)						M3 (n = 43)					
Variable	N	D	R	F	B	O	N	D	R	F	B	O	N	D	R	F	B	O
1.Breasts	35	10	10	14	36	17	27	4	7	16	25	5	16	4	6	9	13	5
2.Perineum	19	10	0	2	2	3	15	11	4	2	7	2	7	5	1	1	2	1
3.Vaginal flow	19	10	2	3	11	8	13	9	6	3	14	5	3	8	2	2	6	1
4.Passing urine	26	8	1	0	1	1	8	6	2	2	5	1	3	4	2	2	2	2
5.Bowel movements	19	5	1	1	2	1	16	6	2	3	9	2	5	4	2	1	4	3
6.Hemorrhoids	12	5	0	0	2	1	12	6	2	3	4	3	4	4	3	0	3	3
7.Changes skin/hair	1	6	1	3	6	3	1	2	2	3	5	3	0	1	1	1	4	1
8.Becoming tired	6	4	7	8	18	10	6	4	9	8	8	3	1	1	5	7	4	0
9.Diet/nutrition	9	9	7	6	27	15	4	5	2	5	17	4	4	4	2	1	10	0
10.Postnatal exercises	2	5	2	4	15	17	10	4	3	9	18	6	5	3	1	2	13	4
11.Getting figure back	3	5	5	10	17	11	5	2	4	6	11	6	1	2	1	0	6	2
Total in category	151	77	36	49	137	87	117	59	43	60	123	40	49	40	26	26	67	22
Total sources accessed	537 (mean = 10.95)						442 (mean = 9.82)						230 (mean = 5.35)					

Key: N = Nurse D = Doctor R = Relative F = Friend B = Book O = Other during pregnancy. Relatives and friends were contacted most often for information about self care by the subjects in the control group at M2. Subjects in the experimental group had frequent contact with the researcher in the first week after discharge from hospital. Chi square analysis revealed similar significant differences in sources of information used over time on most self care dependent variables within the experimental and control groups (see Table E-17, Appendix E). 'Breasts' was the self care concern for which subjects in both groups most frequently sought information at each time period (see Table 17). This is to be expected in view of the importance subjects placed on their concerns about 'breasts' and 'breastfeeding'.

Sources of information for baby concerns

The frequency distributions of sources of information for baby concerns within the experimental and control groups at each time period showed that more sources were contacted for baby concerns as mothers had more concerns about baby than about self care concerns (see Table 19). Subjects in the control group used more information sources than did subjects in the experimental group, particularly at M2. The smaller number of resources accessed by subjects in the experimental group at M2 is possibly due to the contact these mothers had with the researcher. Nurses were most often contacted for concerns about physical caretaking and breastfeeding at each time period, particularly by subjects in the control group. Books were the most frequent source of information for concerns related to infant behavior and development. The experimental group subjects did more reading about baby care in pregnancy than subjects in the control group. They also consulted more resources about 'infant behavior' at M3 (see Table 17).

Table 19 Sources of Information for Baby Concerns - Frequencies

Experimental group

	M1 (n=50)						M2 (n=47)						M3 (n=46)					
Variable	N	D	R	F	B	O	N	D	R	F	B	O	N	D	R	F	B	O
1.Bathing	42	1	2	1	10	4	18	4	8	2	14	7	10	1	2	0	7	4
2.Care of cord	47	5	2	0	4	5	22	9	6	3	16	4	8	2	2	1	4	4
3.Care of foreskin	7	0	0	0	5	3	6	3	1	0	4	1	5	2	1	0	1	0
4.Care circumcision	14	4	0	0	3	2	6	6	2	0	4	2	4	3	0	1	2	2
5.Breastfeeding	41	10	13	11	32	25	19	10	9	8	26	11	12	5	7	6	12	6
6.Bottlefeeding	2	0	1	0	2	0	5	5	4	2	5	1	6	4	3	8	7	2
7.Weight gain	11	5	3	3	15	5	10	23	2	3	13	4	10	19	3	3	12	2
8.Skin	11	6	4	2	18	4	7	9	4	1	10	3	7	12	7	5	14	3
9.Jaundice	5	6	1	2	4	1	10	5	0	2	4	1	6	7	0	0	2	2
10.Behavior	9	5	9	5	27	8	17	17	11	6	23	6	7	16	13	8	19	4
11.Sleep patterns	20	6	9	6	23	11	14	8	8	7	18	3	5	9	6	6	11	2
12.Crying	9	0	3	2	18	7	7	5	2	3	18	2	0	3	5	4	10	3
13.Wet diapers	16	2	5	4	22	17	19	7	2	2	19	5	7	7	1	1	6	3
14.Soiled diapers	17	5	6	5	20	13	22	11	5	2	21	3	10	9	3	2	9	1
15.Normal developm't	4	4	6	7	28	11	7	10	6	3	23	4	7	14	6	7	20	5
16.Infant safety	2	0	7	9	37	29	6	1	3	1	25	7	4	2	4	3	11	7
Total in category	256	59	71	57	268	145	195	133	79	45	249	69	108	115	63	51	140	48
Total sources accessed	856 (mean = 17.12)						770 (mean = 16.38)						525 (mean = 11.41)					

Control group

	M1 (n=49)						M2 (n=45)						M3 (n=43)					
Variable	N	D	R	F	B	O	N	D	R	F	B	O	N	D	R	F	B	O
1.Bathing	44	0	2	0	6	9	29	3	9	6	15	4	14	3	5	2	6	3
2.Care of cord	48	1	3	0	5	5	26	10	6	6	9	2	12	4	3	1	2	2
3.Care of foreskin	3	1	0	0	4	12	4	4	0	1	4	1	2	5	0	0	4	0
4.Care circumcision	14	3	1	1	1	1	9	3	2	1	1	0	4	4	1	0	0	0
5.Breastfeeding	42	11	13	16	29	20	28	8	13	16	23	5	15	5	9	9	12	5
6.Bottlefeeding	6	1	1	1	3	1	6	1	1	4	8	1	4	5	1	2	8	2
7.Weight gain	13	10	3	2	9	5	15	20	2	4	12	1	7	17	3	1	4	0
8.Skin	16	9	3	4	10	8	9	10	8	7	16	4	7	13	7	5	13	1
9.Jaundice	6	5	0	0	1	1	14	7	1	1	2	1	3	5	0	0	0	0
10.Behavior	11	7	9	8	17	7	15	13	10	11	19	4	9	9	8	9	14	0
11.Sleep patterns	21	8	7	7	12	6	19	9	9	13	19	4	6	8	7	6	13	1
12.Crying	12	3	6	6	10	6	7	4	7	11	16	2	9	7	2	1	11	2
13.Wet diapers	15	7	10	10	18	17	18	10	3	5	18	4	9	7	2	1	11	2
14.Soiled diapers	23	6	9	7	17	12	24	12	6	8	24	4	10	14	2	3	11	2
15.Normal developm't	5	5	8	6	23	11	6	9	7	8	25	5	7	12	3	6	18	4
16.Infant safety	5	2	11	16	31	24	9	3	4	4	22	9	5	1	2	6	17	4
Total in category	284	83	86	84	196	145	238	126	88	106	233	51	129	119	55	52	144	28
Total sources accessed	878 (mean = 17.92)						842 (mean = 18.71)						527 (mean = 12.26)					

Key: N = Nurse D = Doctor R = Relative F = Friend B = Book O = Other

Doctors were contacted most often for information about 'weight gain', 'skin problems',' infant behavior', and 'normal development' by mothers in both the experimental and control groups. Relatives and friends were sought out more frequently by mothers in the control group at M2 for information about baby, particularly concerning 'breastfeeding' and 'infant behavior'.

Chi square analysis for differences in sources of information showed significant decreases over time on most dependent variables within within the experimental and control groups (see Table E-18, Appendix E). 'Breastfeeding' was the concern for which more sources of information were used most consistently at each time period within each group.

Sources of information used for personal and family adjustment concerns

There was far less information seeking for personal and adjustment concerns than for self care and baby concerns at all time periods. The frequency distributions for sources of information about adjustment dependent variables at each time period showed similar patterns within each group except for the dependent variable 'family planning'. Subjects in the control group contacted more information sources about 'family planning' at each time period (see Table 20). Chi square analysis revealed no significant difference on sources of information between the two groups. There were similar significant differences in sources of information over time within each group except for 'family planning' (see Table E-19, Appendix E). Books were the most frequent source of information for adjustment concerns at all time periods. Prenatal classes were an important source of information at M1. Nurses were the least used source of information for adjustment concerns. Doctors were contacted regarding 'family planning' and 'sexual intercourse'. This is to be expected as resumption of sexual activity and birth control are important concerns between two and six weeks after childbirth. Relatives and friends were consistently used for information about 'fitting baby into family' and 'emotional changes'.

The concerns for which information was most often sought differed between the two groups (see Table 17). Subjects in the experimental group used more resources for information about the dependent variable 'emotional changes' at all time periods. Subjects in the control group used more information sources at M2 for most adjustment variables.

Table 20 Sources of Information for Personal & Family Adjustment Concerns

Frequencies within Experimental Group

	M1 (n=50)						M2 (n=47)						M3 (n=46)					
Variable	N	D	R	F	B	O	N	D	R	F	B	O	N	D	R	F	B	O
1.Fitting baby into family	0	0	11	10	24	14	2	0	9	8	11	1	3	0	6	5	6	3
2.Emotional changes	0	3	12	12	27	17	10	0	13	12	18	2	5	1	8	7	7	3
3.Family planning	0	4	0	0	19	9	2	2	0	1	12	2	0	10	1	0	7	4
4.Sexual intercourse	1	15	3	3	26	15	2	6	0	1	16	1	4	15	1	2	9	2
Total in category	1	23	26	25	96	55	16	6	22	22	57	6	12	26	16	16	29	12
Total sources accessed	226 (mean = 4.52)						131 (mean = 2.79)						111 (mean = 2.41)					

Frequencies within Control Group

	M1 (n=49)						M2 (n=45)						M3 (n=43)					
Variable	N	D	R	F	B	O	N	D	R	F	B	O	N	D	R	F	B	O
1.Fitting baby into family	0	2	8	11	18	7	5	1	9	11	7	4	1	1	4	11	4	4
2.Emotional changes	0	1	8	11	19	9	7	2	11	11	14	3	3	5	6	5	7	1
3.Family planning	1	12	3	4	18	13	5	8	2	3	14	6	3	10	2	1	8	4
4.Sexual intercourse	1	14	2	2	26	15	4	7	0	0	15	5	3	14	1	0	10	2
Total in category	2	29	21	28	81	44	21	18	22	25	50	18	10	30	13	17	29	11
Total sources accessed	205 (mean = 4.18)						154 (mean = 3.42)						110 (mean = 2.56)					

OVERALL MATERNAL SELF-CONFIDENCE

Hypothesis #4: New mothers who are telephoned daily by a nurse after early hospital discharge will have more overall maternal self-confidence than will control group mothers

Subjects' overall maternal self-confidence was examined. They were asked to grade their degree of maternal self-confidence related to a series of scale items on a Likert scale where 1 meant no confidence, and 7 indicated great confidence. The means for each item were calculated (see Table E-20, Appendix E). Repeated measures analysis of variance was used to analyze the means of each scale item with the two factors, group and time (Table E-21, Appendix E). There were no significant interactions found between the factors group and time on any maternal self-confidence scale items. There were no significant differences between the experimental and control groups on any of the dependent variables. However, there were significant increases in the means of all maternal self-confidence items within each group, reflecting a main effect of time. This suggests that being a new mother becomes easier with time and maternal self-confidence increases slowly over time (see Table 21).

Table 21 Overall Maternal Self-Confidence
Mean Scores of Scale Items by group and questionnaire administration

	Experimental Group			Control Group		
Admin	N	Mean	SD	N	Mean	SD
M1	50	4.73	1.32	49	4.54	1.39
M2	47	4.92	1.39	45	4.81	1.44
M3	46	5.60	1.10	43	5.5.1	1.11

Control group mothers had greater increases in maternal self-confidence at each time period with the scores of the two groups being similar at M3 (see Table E-20, Appendix E). The item with the highest overall mean was 'enjoy being a mother', while the item with the overall lowest mean was 'able to help or advise other new mothers'. While the subjects liked being a mother, they did not feel confident enough to be able to advise other new mothers on issues related to motherhood.

Conclusion about Hypothesis #4. Contrary to expectations, the differences between the experimental and control groups on maternal self-confidence were not significant. Therefore, hypothesis #4 cannot be accepted.

CONFIDENCE IN INFANT CARE ABILITY

Hypothesis #5. New mothers who are telephoned daily by a nurse after early hospital discharge will have higher confidence in infant care ability than will control group mothers

The subjects' confidence in knowledge about and ability to provide infant care was examined. They were asked to grade their degree of confidence in infant care ability on a series of items on a Likert scale from 1-7, where 1 meant not confident, and 7 indicated very confident. Mean scores for each subject were calculated (see Table E-22, Appendix E). The mean scores on all scale items were examined with repeated measures analysis of variance using the two sets of factors, group and time (see Table E-23, Appendix E). There were no significant interactions found between the factors group and time on any of the confidence in infant care scale items. There were significant differences in mean scores within each group over time on all dependent variables except for 'bottlefeeding', reflecting a main effect of time on most dependent variables. The lack of increased confidence in 'bottlefeeding' at M2 is probably explained by the growing number of mothers who switched from breastfeeding to bottlefeeding. The different type of feeding was a new skill in which they had to gain confidence. There was a significant difference between the experimental and control groups on the item 'knowledge about soiled diapers', with control group mothers gaining confidence more rapidly on this item than experimental group mothers.

Confidence in infant care ability increased over time, and there were greater increases in confidence in infant care than for maternal self-confidence over the six wek period of the study. Confidence in infant care ability rose steadily for each item at each time period within both groups, except for 'bottlefeeding' at M2 in the control group when it decreased (see Table E-22, Appendix E). Subjects in the experimental group had higher confidence scores at M1 and M2, but the two groups were equally confident at M3 (see Table 22). The scale item with the highest overall confidence score was 'care of cord', while the item with the lowest score was 'knowledge about baby's behavior'.

Table 22 Confidence in Infant Care Ability
Mean Scores of Scale Items by group and questionnaire administration

	Experimental group			Control group		
Admin.	N	Mean	SD	N	Mean	SD
M1	50	4.68	1.52	49	4.58	1.41
M2	47	5.37	1.23	45	5.10	1.34
M3	46	5.83	1.13	43	5.86	1.06

Correlation analysis for similarities between overall maternal self-confidence scores and confidence in infant care ability scores revealed a significant positive correlation (r = 0.68 (280), p = 0.000). The correlation increased between M1 and M3 (r = .62 (99), p = .000 at M1; r = .61 (92), p = .000 at M2; r = .70 (89), p = .000 at M3). This suggests that as mothers' confidence in infant care increases, overall maternal self-confidence increases.

Conclusion about Hypothesis #5. Contrary to expectations, hypothesis #5 cannot be accepted as there was not a significant difference in confidence in infant care ability scores between subjects in the experimental group and the control group.

TELEPHONE FOLLOW-UP

Daily telephone calls

Three hundred and fifty (350) telephone calls were made by the researcher to the 50 subjects in the experimental group. Contact could not be made with 18 mothers on one occasion, and with one mother on two occasions. The reasons for the unsuccessful calls were usually that the subject was out or away, but on two occasions the mother had been readmitted to hospital: one for postpartum hemorrhage; the other with her baby for treatment for neonatal hyperbilirubinaemia. The best time to make telephone calls to the mothers proved to be in the afternoon or early evening. Mothers generally slept late in the morning after having disturbed nights. The amount of time spent making phone calls each day ranged from a few minutes to one hour, depending on how many mothers were called that day. At any one time, a maximum of seven mothers were being phoned.

Table 23 Daily telephone calls - length of calls in minutes

Minutes	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Mean length	10.50	8.84	8.28	7.77	6.35	6.40	6.61
Range	7-18	2-21	3-20	3-20	3-12	3-20	3-17

Length of calls. The length of telephone calls tended to decrease each day (see Table 23). The mean increase on days six and seven did not reflect the true decrease in time each day. The increase was due to five mothers who were having a major problem at that time.

Researcher's telephone calls

At each telephone call the researcher went through the checklist on the Telephone Interview Sheet, asking each mother if she had concerns related to self care, baby care, or personal and family adjustment variables. If she did have concerns, were they major or minor?

Mothers' Concerns

The frequency distributions of concerns expressed by the mother during the daily telephone calls show the most frequent concerns for self, baby, and adjustment variables (see Tables E-21 & E-22, Appendix E). The most frequent self concerns were 'becoming tired, breastfeeding, and vaginal flow', with the most frequent concerns about baby related to 'behavior (fussiness), sleep and feeding patterns, crying, and bowel movements', and 'family adjustment' the highest adjustment concern. Tables E-23 & E-24 (see Appendix E) summarize the frequency of major and minor concerns by day for the subjects in the experimental group. There were far more minor concerns than major concerns in all categories, with the bulk of these occurring on days one to three after hospital discharge. The number of concerns decreased each subsequent day, with a marked drop on day six. It appears that a daily telephone call till the fifth postpartum day is useful to new mothers, with follow-up calls needed or indicated only if a mother is still having problems.

Major concerns. There were 117 major concerns ckecked off. The most frequent concerns were: 'breasts, hemorrhoids, perineum, and rest and sleep' for self care; 'breastfeeding' for baby care; and 'emotions ' for adjustment.

Minor concerns. There were 715 minor concerns cited. The most frequent concerns were: 'perineum, breasts, rest and sleep, and hemorrhoids' for self care; 'jaundice, breastfeeding, sleep patterns, and crying' for baby care; and 'family adjustment' for adjustment.

No concern. There were no concerns expressed by any subjects regarding 'postnatal exercises, bathing baby, infant development, and infant safety'. 'Circumcision' and 'infant weight gain' were only mentioned once as being a concern, while 'bottlefeeding' was identified as a concern on two occasions.

Mothers' feelings about daily telephone calls

Mothers were asked if they found the daily telephone calls helpful. Subjects were unanimous in answering yes. Several mothers expressed disappointment that the telephone calls ended on the seventh day. Mothers found the calls helpful for the following reasons: regular, daily contact to answer questions and provide support (27); advice and information provided (13); encouragement and reassurance provided (13); someone to talk to about problems (6); immediate answers to actual or anticipated concerns provided (5); knowing someone with knowledge was available if needed (4); felt secure knowing that nurse was going to call (3); set mind at rest about minor concerns (3); helpful to talk to nurse, didn't want to bother doctor; telephone calls not intrusive like home visits; calls were made to the subject so (she) didn't feel that (she) was bothering the researcher; didn't feel so isolated; the researcher asked specific questions (one each)

Clinicians contacted by subjects for problems

During the seven days of telephone follow-up, 57 mothers made telephone calls or visits to clinicians for problems: 14 were made to a Paediatrician, mainly concerning jaundice; 15 were made to the community health nurse in the follow-up program from the Local Board of Health chiefly regarding breastfeeding problems; 15 calls or visits were made to a variety of resources in the 'other' category: Emergency, for postpartum hemorrhage or passing clots (2), and infant illness (1); the laboratory for monitoring of neonatal jaundice (4); the La Leche League (2); the hospital Breastfeeding

Clinic (1); the hospital Warm Line for concerns re breasts, umbilical cord(4); and a Breastfeeding Clinic run by a general practitioner for breastfeeding problems related to tongue tie (1). Obstetricians were contacted six times for a variety of self care problems: urinary tract infection, passing clots, uterine cramps. Family Doctors were contacted four times for maternal fever. Six mothers made further appointments for follow-up after initial phone calls or visits. Those appointments were with the Obstetrician, Paediatrician, Family Doctor, or laboratory.

Telephone calls made to researcher

Very few calls were made by subjects to the researcher in the six week period of the study. One call was made in the first week regarding infant behavior. Only four calls were received after the first week: two were in the second week regarding baby's fussiness and a skin rash; one was made in the fourth week regarding infant vomiting; one was made in the sixth week regarding infant crying. There were no calls to the researcher from subjects in the control group.

Subjects comments on nursing care

On the intermediate and summary questionnaires, subjects were asked open ended questions on how nurses could provide better care. A few mothers provided explanations of their answers, and included anecdotal comments. Some of this information was confidential and included positive and negative comments about nursing care received during their hospital stay and suggestions for patient care and teaching. These comments were passed on to the Manager of the Obstetric units. A content analysis of the comments was done, and common themes were found. Subjects' responses focused on three areas: hospital care, home care, and telephone follow-up.

Nursing care in hospital. Many mothers felt that they received the best possible nursing care in the time available. Comments were made on the workload of the nurses in hospital and the fact that they did not appear to have enough time to teach mothers. Some felt that too many people were involved in providing care, and that the information provided was not consistent. Others were happy with the information received. Some mothers commented on the need for more one to one contact, breastfeeding help, information, demonstrations, discussion of concerns, and anticipatory guidance. Suggestions from the mothers regarding new mothers' information needs included the need for: teaching videos and handouts in hospital; a handout with a list of recommended books regarding baby care; a checklist with warning signs of complications or illness; and information that could be mailed to the mother if needed. However, previous literature suggests that mothers are not ready to utilize this information during the hospital stay with early discharge. This type of information may be useful for the mothers after discharge.

Home care. Many mothers commented on how beneficial they found the home visit provided by a community health nurse from the follow-up program. More mothers in the control group commented on the helpfulness of the community health nurse. Some felt that she was a more useful contact than the Doctor. Mothers felt that there should be home care provided for at least a week but there was a variety of opinions as to how often visits should be made. Several mothers felt that they would like continued contact for up to six weeks after discharge.

Telephone follow-up. Suggestions were made by subjects in both groups about the need for nurses to telephone new mothers. They felt that regular telephone contact with a nurse was important, but the time intervals suggested for these calls varied from daily , one or two per week, or a phone call at one or two weeks after birth. The availability of a hot line to access help or information was also considered important.

CHAPTER V

CONCLUSIONS and DISCUSSION

Conclusion

In this study the purpose of the research was to find out if daily telephone follow-up by a nurse in the first week after early maternity discharge makes a difference to the new mother's number and intensity of concerns, information sought, sources of information, overall maternal self-confidence, and confidence in infant care ability. The findings showed there were no significant differences on the measured variables between the experimental and control group mothers . While the hypotheses were not supported, some interesting findings emerged from this research and will be discussed in this chapter.

In Chapter V, the strengths and limitations of the study will be discussed, together with the problems experienced as the study progressed. The findings from the study will be explored in realistic terms, with conclusions made about the hypotheses and telephone follow-up. The relationship between the present research findings and those of previous research will be explored. The use of Bandura's self-efficacy model as a basis for this study will be examined. Implications for nursing in light of the study findings will then be highlighted, as well as indications for future nursing research.

Strengths and limitations of the study

Strengths. One of the strengths of the study was the high response rate to the mailed questionnaires. This high response was not anticipated as mailed questionnaires typically have a low response rate. One reason for the high response rate may have been the interview conducted at the first measurement where subjects met with the researcher. Personal contact with the researcher may have made the mothers feel that they had a stake in the study. Another reason may have been the reminder letters that were sent to subjects who were late returning their questionnaires.

Another strength was the reactive nature of the Maternal Concerns and Information Scale. During the initial interview, the scale often prompted subjects to ask questions about what they 'needed to know' about a topic. Other researchers have had similar experiences (Froman & Owen, 1989; Rovers, 1986). A similar checklist used for individual assessment of maternal teaching needs may be useful in postpartum units where time for teaching is very limited.

Limitations. There were several limitations in this study.

The sample. The sample consisted of highly educated women with above average family incomes from a university teaching hospital in one geographical area. This sample was not representative of the general population of new mothers in the city. The subjects in the sample were well read and a high percentage of them had attended prenatal classes. Results, therefore, cannot be generalized to the general population of first time mothers.

Instruments

The Maternal Concerns and Information Scale. There were two problems associated with this scale. First, the heading on the column "Information sought" was not clear. Subjects answered 'yes' if they had sought information, or if they had received information that they did not seek. This was particularly true at the first measurement. Information that was provided in prenatal classes was cited as information sought, although the mother did not actively seek that information. Therefore, the actual amount of information that was indicated as being 'sought' may have been inaccurate. Second, all 'sources of information' that were used by the mother were indicated. Although this showed the frequency of access, and the wide diversity of information sources, it did not truly indicate who were the principal sources of information for specific concerns. For future use, it may be better to ask the subjects to prioritize their sources, or state the principal or most valuable source of information for each item. If this scale was to be used again, these two problem need to be addressed. Another limitation of this scale was the lack of psychometric data with which to compare the Cronbach's Alpha measurements from this study.

Visits by the community health nurse. A confounding issue in this study was the unquantified amount of contact that the subjects in both groups had with the community health nurse from the home follow-up program from the Local Board of Health. While every mother who was discharged in the early discharge program received a home visit from the community health nurse the day after discharge, some mothers received more than one visit, while others also received a phone call(s) on subsequent days. Therefore, an unknown number of mothers received continued support from this source. The extra contact with the community health nurse was similar to the treatment the subjects in the experimental group received from the researcher. This may have affected measurement responses at M2. Subjects were not asked this information at the second measurement because such support had not been available at the time the study was designed and was only identififed retrospectively as a confounding variable.

Findings

Demographic/biographic.

One third of the sample was over 30 years of age. It has been reported that older mothers tend to have more concerns, read more, attend prenatal classes, be more knowledgeable, and have less maternal self-confidence (Rovers, 1986). There were only eight mothers under the age of 20 years in the sample. Within the total sample there were an unusually large number who had undergraduate and graduate degrees, which probably influenced their information seeking activities. Previous research supports this supposition (Lenz, 1984; Pickens, 1982; Rovers, 1986).

Help at home. The findings that the husband or partner and the subject's mother were the main sources of help at home after discharge is congruent with the findings of several researchers (Entwisle & Doering, 1981; Gruis, 1977; Harrison & Hicks, 1983; Pridham & Zavoral, 1988; Smith, 1989), but not with the findings of Majewski (1987) who found that the mothers of new mothers were very rarely used as sources of help after childbirth. It is puzzling as to why 30 subjects did not consider their mate as a help. Was he away working, or was he truly not a help to his wife? Perhaps she automatically assumed he was a help and did not include him. This finding is supported by Pridham & Chang (1992) who also found that many mothers did not include their husband as a source of help. Perhaps it would be better if the subjects were asked to identify their primary source of help at home after discharge or asked what role, if any, their husbands had as a support for them. Potentially, in the prevailing economic climate, husbands may not have been able to take time away from work and this may not have been viewed as a source of support.

Maternal concerns. Hypothesis #1 was not accepted. The mothers in the experimental group did not have fewer concerns but actually had more concerns overall. Although not significant, the increased number of concerns are likely a result of the daily telephone support by the researcher. This supposition is supported by previous research findings (Affonso et al., 1988; Becker, 1987; Brown, 1967; Haight, 1977; Jordan, 1973; Mercer, 1986; Pridham & Chang, 1992; Pridham, Egan & Chang, 1986). Mothers who have extra contact and support have increased opportunities to ask questions and gain more knowledge. They become sensitized to more issues and, through anticipatory guidance, are more aware of potential problems. The daily telephone calls from the researcher and the use of the telephone checklist prompted the subjects in the experimental group to ask questions and made them more aware of potential problems.

Hypothesis #2 was not accepted. However, subjects in the experimental group tended to have less intense concerns, reporting less high concerns and more low concerns than subjects in the control group. Although these mothers may have been more aware of potential problems than their counterparts in the control group, the intensity of their concerns was not as great. Daily telephone support in the first week postpartum appeared to make a difference to the intensity of concerns for the experimental group mothers, as mothers in the control group had more intense concerns overall.

Mothers in this study had many concerns, but far more of these were rated as low concerns than high concerns. These findings are supported by Harrison & Hicks (1983) and Mercer (1986) who found that primiparae had more minor concerns than multiparae but not more major concerns. Mothers who are well educated, as were the women in this study, have been reported as having more concerns in the early postpartum period (Mercer, 1986; Norr et al, 1988; Rovers, 1986). In this study mothers' concerns were chiefly about their own self care in addition to their babies. These findings differ from those of Gruis (1977) and Harrison & Hicks who found that at four weeks postpartum, concerns about the family were coupled with those about their babies. However, the samples differed in that their studies included multiparae and it is therefore probable that primiparae have fewer family concerns because they do not have other children. There was also a difference in the measurement periods between the studies. Their measurement was at four weeks postpartum, and the measurement times in this study were at two weeks and six weeks postpartum.

Maternal physical concerns decreased as healing took place, and infant care concerns lessened as mothers became more comfortable with caring for their babies. 'Fatigue', 'emotional changes', and 'baby behavior' were the most intense concerns at two weeks postpartum. These findings are supported by several researchers (Bull,1981; Bull & Lawrence, 1985; Gruis; and Pridham et al., 1986). Campbell (1986) also found that emotional fatigue and burn out increased at two weeks postpartum.

The findings relating to the most common concerns about self which were 'breasts', 'becoming tired', and 'getting figure back' are supported by previous research (Affonso, 1987; Bull, 1981; Gruis, 1977; Harrison & Hicks, 1983; Lemmer, 1987; Mercer, 1986; Ruchala, 1991). It was interesting to note, however, that during the initial interview although mothers rated their concern about 'getting figure back' as high, they invariably laughed about it. The intensity of their concern for getting their figures back appeared to be far less than the intensity of their concern about their physical complications. Although the mothers between the ages of 20 and 29 had significantly more concern about getting their figure back than the older or younger mothers, they were not concerned about it at two weeks after childbirth when they are preoccupied with other concerns.

The most intense baby concerns were related to 'breastfeeding', 'caretaking', and 'behavior'. These findings are supported by other research (Adams, 1963; Butts et al., 1988; Chapman et al., 1985; Elmer & Maloni, 1988; Graef et al., 1988; Haight, 1977; Rovers, 1986; Smith, 1989). Breastfeeding concerns were often related to sore breasts and engorgement, or to concern over frequency of feeding, not to the actual feeding. Mothers in the control group had more breastfeeding concerns, most likely because the experimental group mothers were able to discuss their concerns with the researcher during the period of breast engorgement. This finding suggests that consistent support from a nurse over the period of lactogenesis and breast engorgement does help to reduce maternal concerns about breastfeeding.

Mothers in the experimental group also had significantly less intense adjustment concerns about 'fitting baby into the family' and 'emotional changes' than mothers in the control group. These findings are supported by the work of several researchers (Arizmendi & Affonso, 1987; Chapman et al.; Gruis, 1977; Harrison & Hicks, 1983; Hiser, 1987; Moss, 1981; Rovers; Ruchala, 1991; Smith). Consistent nursing support in the early postpartum period appears to reduce the new mother's concerns about the adjustment to a new baby and fitting baby into the family.

Information sought. Hypothesis #3 was not accepted. Both groups of mothers sought a lot of information. Both groups were older, had a higher education level and higher income than the general childbearing population. In previous research it was found by both Rovers (1986) and Salmeron (1988) that older mothers sought more information on infant care, which could explain the findings in this study. Previous research has also shown that middle class mothers with post-secondary education attend prenatal classes and read more during pregnancy (Entwisle & Doering, 1981; Lenz, 1984; Pickens, 1982; Rovers, 1986), findings which are reflective of this group.

During the initial interviews with the mothers, it was apparent that they often did not know what they needed to know until a topic was introduced as part of the interview guide or until they were faced with a new situation. Several other researchers have noted this phenomenon (Brown,1967; Curry, 1983; Rovers). The use of the Maternal Concerns and Information Scale during the initial interview prompted mothers to ask about a topic on which they suddenly recognized that they lacked knowledge. In the early postpartum, mothers sought more information about baby concerns, a finding supported by Gruis' work (1977).

Sources of information. When seeking information the mothers indicated that nurses were the most frequent sources of information in hospital and in the first two weeks postpartum, a finding which is supported by Rover's research (1986), but is contrary to the findings presented by Gruis (1977) and Harrison & Hicks (1983). Rovers used telephone calls to contact the subjects in her study, while Gruis and Harrison and Hicks used mailed questionnaires. The personal contact used by Rovers and in this study may account for the difference in the findings identified in Harrison and Hick's research. Many mothers are hesitant to ask questions in hospital, not wanting to bother busy nurses. Rovers found that if a mother had contact with a nurse on more than one occasion that nurse was perceived to be credible by the mother. The nurse's approachability and her willingness to spend time with the mother to answer questions also increased her credibility. It appears that the researcher in this study was perceived as credible by the subjects receiving the telephone calls. Many subjects commented on the helpfulness of the telephone calls to "... answer questions, provide support, advice and information, and help with problems...". Home visits by community health nurses, and nurse-initiated telephone calls provide opportunity for mothers to seek information from a nurse.

Mothers often used more than one source of information for a concern. This finding is supported by that of Ruchala (1991) and Rhode & Greonjes-Finke (1980) who also found that mothers used a variety of resources which complemented each other. Mothers receiving telephone support contacted a large number of resources for help and information, as they were encouraged to do so during the telephone calls (Groenjes-Finke). Their finding is similar to the finding in this study that the experimental group mothers, who were telephoned, sought more information and used more resources than the control group mothers. Contacting clinical resources for information tended to decrease over time which is similar to the findings of Pridham, Hansen, Bradley & Heighway (1982). As the more acute concerns about physical complications, infant caretaking and behavior decrease, mothers turn more to family members and friends for information about baby behavior and development, contacting clinicians only for acute concerns such as illness.

Maternal self-confidence and confidence in infant care ability. Hypotheses #4 and #5 were not accepted. Mothers in both groups had similar confidence levels at six weeks' postpartum. Although the experimental group mothers generally had higher confidence scores at each time period, the control group mothers had larger increases in scores on some self-confidence scale items two weeks after hospital discharge. Previous research has shown that low parity and reduced maternal confidence were predictors of higher maternal concerns (Ruchala, 1991). Perhaps, the reduced self-confidence on some items for the experimental group mothers at two weeks postpartum was a factor in the increased number of maternal concerns in that group between two and six weeks postpartum.

Confidence in infant care appears to increase more rapidly than maternal self-confidence. Subjects showed higher confidence scores on infant care scales than on maternal self-confidence scales. This finding is supported by Rovers (1986). As mothers become proficient in looking after their babies, their confidence quickly increases, but maternal self-confidence increases more slowly. Perhaps attendance at prenatal classes had an influence on the increased confidence in infant care, which was a finding in previous research conducted by Hillier (1989). This increase in confidence levels of new mothers over the first six week's postpartum is supported by the findings of Ruchala (1991) who found a significant increase in confidence scores of primiparae between two and six weeks postpartum. Age and education have been cited as negatively affecting maternal confidence (Mercer 1986; Rovers & Fuller, 1986). These relationships were not examined in this study due to the relative homogeneity of the sample.

Early maternity discharge. Although the mothers in this study had no choice about early discharge, the majority of them stated they were happy to go home when they did. None of the mothers recruited early in the study were prepared in advance for early discharge from hospital. Eleven (11%) resented their mandatory discharge, while more subjects (23%) felt this way two weeks after discharge, with fewer experimental group mothers than control group mothers reporting this. The resentment felt by the mothers is supported by previous research (Scupholme, 1981; Waldenstrom, 1987,1988,1989). Telephone support from the researcher to mothers in the experimental group may have contributed to fewer experimental group mothers resenting early discharge as they had more opportunity to ask questions and seek reassurance if they had expressed concerns.

Some of the mothers who stated that they were not satisfied with early discharge resented the fact that they did not have a choice about discharge time and felt that they needed more time for teaching. Previous research by both P. Patterson (1987) and Waldenstrom (1989) support this finding. Other mothers stated that they were not happy about early discharge from hospital because they were tired after their labor or had a sore perineum. Campbell & Field (1990) and Stewart & Corvino (1991) in two surveys conducted in the same city found that 21% to 28% of mothers would not, or did not, elect early discharge if they had a difficult labor or an episiotomy. The relationship between readiness for discharge and episiotomy, and readiness for discharge and difficult labor was not significant in this research. Only five subjects commented that they were dissatisfied with early discharge because of a sore perineum, while 52 subjects had an episiotomy at the time of birth. No mothers gave a difficult labor as a reason for not being happy about their early discharge. The vast majority of mothers were satisfied with early hospital discharge. The main reason that mothers gave for being happy to go home early was that they were able to relax more at home. Several researchers have reported similar findings (Carty & Bradley, 1990; Gee, 1984; James et al., 1987).

The outcomes for mothers and their babies in this study and the low rehospitalization rates were similar to those cited in previous studies (Beck, 1991; Norr & Nacion, 1987). Control group mothers had more identified problems or complications after discharge than did mothers in the experimental group. During telephone calls, mothers were able to ask about their concerns and deal with them before they became complications.

Telephone contact with the researcher could therefore be a factor in the fewer complications experienced by mothers in the experimental group. However, given the small numbers of complications, it may also be due to chance. Research by Wasson & Gaudette (1982) supports the value of telephone contact in reducing the incidence of complications. There were more infant problems than maternal after discharge from hospital, which is consistent with the findings of previous researchers (Beck; James et al., 1987; Jansson, 1985; Norr et Nacion; Waldenstrom, 1987; Weinberg, 1994).

Telephone follow-up. Telephone calls can be a quick, convenient, and cost-effective means of providing continuity of nursing care, and giving the mother reassurance and information. The telephone calls in this study ranged from an average of six and one half minutes to eleven minutes. Mothers liked the daily telephone calls. They appreciated them for the information, support, encouragement, and reassurance they received, a finding that has been documented by other researchers (Butts et al;,1988; Donaldson, 1977; Evans, 1991; Haight, 1977; Lubic, 1988; Rush & Kitch, 1991). They also commented that the regular contact was reassuring and they felt secure knowing there was someone who was knowledgeable to talk to if they needed advice about a concern or problem. Previous researchers have found that telephone contact eases anxiety and promotes maternal self-confidence (Butts et al.,1988; Donaldson, 1988; Elmer & Maloni, 1988; Rauen, 1985; Siegel, 1992; Thayer, 1984).

The telephone calls to mothers in the experimental group appear to have been important for the first five days after discharge, when the number of concerns expressed dropped sharply. These findings are contrary to those of Donaldson (1977) and Haight (1977) who suggested that an initial phone call three to seven days after discharge was appropriate. However, given the dates of their studies, it is probable that the mothers in the programs documented by these researchers went home considerably later than mothers in this study, when the period of breast engorgement and acute neonatal jaundice has passed. Siegel (1992) suggests that 48 hours post discharge is ideal for the initial telephone call. The findings from this study showed that the initial telephone call the day after discharge was useful. There were more concerns documented on day one than on subsequent days. Teaching and anticipatory guidance about self care such as breast changes, and infant care such as monitoring voiding and bowel movement patterns, and neonatal jaundice, was important for mothers in the first few days after discharge. Teaching was important to reinforce teaching provided in hospital, particularly as mothers were more ready to learn on the second postpartum day. The teaching was also individualized to the mother's needs. Several researchers have documented the importance of individualizing teaching to the mother's needs (Avery et al., 1982; Harrison, 1990; Martell et al., 1989; Rovers, 1986).

The use of answering machines can be frustrating for the nurse making the phone call. Mothers, however, find them helpful to block rest time and screen unwanted calls (Lamp, 1992). The subjects in this study were told by the researcher to say if the call was inconvenient. Making repeated calls to the mothers proved to be time consuming. Perhaps a better solution, would be to decide with the mothers, in advance, when the calls should be made. The use of a checklist during the telephone calls was useful and ensured that all the topics were covered at each call. This is consistent with Donaldson's (1988) finding. Many concerns expressed by mothers during the telephone calls were actually needs for affirmation of mothering skills, and for reassurance from an 'authority figure' that they were doing the right thing. This support possibly accounted for the higher confidence scores displayed by subjects in the experimental group, a finding supported by those of other researchers (Adams, 1963; Lemmer, 1987; Mercer, 1981; Sumner & Fritsch, 1977).

There were very few mother initiated telephone calls received during this study, unlike those described by Haight (1977) and Butts et al., (1988). Using a proactive approach in this study possibly reduced the number of calls. Mothers knew the researcher would be calling and wrote down questions to ask when she called. If they had not known a nurse would be calling these mothers may have made calls to other resources for information about their concerns. Mothers were told that they could call anytime in the six week period of the study. No calls were received after the second week. This perhaps reinforces the finding from this study that mothers tend to change their sources of information over time, and is supported by the findings of several researchers (Maloni, 1994; Pridham & Chang, 1992; Pridham et al., 1982). There was less clinician contact, and more information sought from relatives and friends over time (Pridham et al., 1982),

Mothers' comments about nursing care. The comments made by the mothers gave insight into their perceptions of the nursing care they received, and listed suggestions for providing information to new mothers. Some mothers commented about the inconsistency in information provided by nursing staff. This finding is a continuing problem that is supported by previous research (Ball, 1982; Ellis & Hewat, 1983; Field & Renfrew Houston, 1987; J. Paterson, 1984; Rovers, 1986). The home visit made by the community health nurse was considered to be beneficial by the mothers. The control group mothers commented on this more than mothers in the experimental group, suggesting that it does not matter what type of nursing support is provided. It is the continuity of nursing care that is important after early hospital discharge.

Several mothers commented on the need for continued nursing support in the first six weeks after hospital discharge.

Theoretical model.

Bandura's theory of self-efficacy (Bandura, 1977, 1982) was used as the framework for this study. The findings demonstrate that the new mother's self-efficacy is influenced by her perception of her capability to perform infant caretaking tasks, or to cope with a new or stressful situation, and by her expectations of a successful outcome. Learning how to care for her baby and deal with problems, as well as achieving success in performing caretaking tasks and resolving problems, led to increased confidence in infant care ability and overall maternal self-confidence. Prior experience and mastery in performing a task or coping with a new experience is the most important factor in predicting confidence in subsequent performances (Bandura). As mothers became more confident through repeat performance of caretaking tasks, and resolution of problems, their feelings of competency increased. Subjects in both the experimental and control groups showed increased confidence in infant care capability and overall maternal self-confidence over the time period for the study. The confidence levels increased more rapidly in the experimental group, although by six weeks postpartum there was only minimal difference between the two groups. The increasing confidence scores over time provide credence for Bandura's theory.

Implications for nursing

The quality of nursing care provided to new mothers in the early postpartum is critical and has long-lasting effects. Parenting behavior and maternal sense of competence developed with her first baby affects the mother's future childbirth and parenting experiences (Gojmerac, 1988). It is important for nurses to recognize the role they play in the primipara's transition to motherhood. They should maximize opportunities to provide information and to help new mothers (Rhode & Groenjes-Finke, 1980). Discussion about the implications for nursing intervention will be based on the findings of this study.

Maternal fatigue. One important nursing intervention needed by the new mother is for nurses to help her to get as much rest and sleep as possible. The first two weeks after hospital discharge is a critical time for maternal recovery from childbirth. Sleep alterations resulting from the caretaking needs of the baby can affect this recovery (Gardner, 1991). Fatigue and lack of sleep can affect the mother's perceptual and cognitive functioning, as well as her ability to accurately interpret her baby's behavioral cues (Arizmendi & Affonso, 1984; Mercer, 1986). Rubin (1984) and Mercer (1986) allude to the pervasive fatigue that mothers experience in the first few weeks after childbirth. In this study 'becoming tired' was included in the three most intense concerns at each time period by mothers in both groups, and was listed as the most intense concern at two weeks after discharge by mothers in the control group. Ten mothers were not happy about early discharge because they were very tired. Fifteen (15) mothers also indicated that 'extreme tiredness' and 'insufficient time' for rest were problems after discharge from hospital.

Teaching new mothers. Perhaps the most critical area that needs to be addressed is when to teach new mothers about self care and baby care when discharged early from hospital. In this study, between one quarter and one third of the sample subjects felt that the information provided in hospital was inadequate. Nine mothers indicated that they were not happy about going home early because they believed they needed more time for teaching in hospital. At discharge 25 mothers commented that they did not receive adequate information about self care while in hospital. Two weeks after discharge 37 mothers felt the information they received in hospital was inadequate , and 24 felt that way six weeks after discharge. The most common items they believed were not adequately taught were 'breastfeeding information' and 'perineal care'. Fifteen (15) mothers also believed they had not received any information about self care or baby care in hospital. At discharge 26 mothers indicated they received inadequate teaching about baby care in hospital, and 35 believed this two weeks after discharge, while 26 still identified it as an educational gap six weeks after discharge. The baby items mothers listed as being inadequately taught were 'breastfeeding', 'bathing' and 'care of cord', while five mothers consistently felt they had not received any information about baby care in hospital.

The mothers' readiness to absorb information the day after childbirth may be a factor in the concern about inadequate teaching by nurses. The practice of trying to teach the same amount of information to mothers in early discharge programs that was taught to mothers staying longer in hospital is not feasible. Maternal exhaustion, readiness for learning, and individual requirements need to be taken into consideration. Teaching should be realistic for the mother's needs, and the time available. The use of a checklist or learning assessment guide to find out individual needs for learning is important, especially with primiparae, as they often do not know what they 'need to know' and checklists have been shown to be useful in prompting information seeking in new mothers (Curry, 1983; Rovers, 1986). The need for continuity of nursing care is important after discharge from hospital. Inconsistency in teaching, particularly in regard to breastfeeding, is a continuing problem that makes the transition to motherhood more difficult for many mothers.

The priorities for teaching in the early postpartum should be topics that mothers most often mention as concerns: physical complications, breast care, breastfeeding, physical care of baby, baby behavior, emotional changes, and fitting baby into the family. New and creative methods of teaching need to be tried. Anticipatory guidance would be helpful to the mothers together with written information to reinforce teaching, and videos of demonstrations on baby care or behavior that could be borrowed to watch at home.

Support for new mothers.

Nursing programs after early hospital discharge. With early maternity hospital discharge quickly becoming the norm in North America, the need for universal nursing programs to meet the needs of new mothers after early discharge is crucial for continuity of care from hospital to home.

Telephone support. In this study no significant differences were found between the mothers in the experimental and control groups. However, mothers who received telephone calls from the researcher commented on their value and how much they appreciated the regular contact with the researcher, particularly for the encouragement, reassurance and information provided. The cost-effectiveness of telephone calls versus home visits for continued nursing follow-up needs to be explored. While mothers probably need a home visit the day after discharge, many mothers may feel confident and supported if they were followed by telephone after that. The mothers in this study commented on their comfort in knowing that the researcher was going to call, and was available if they needed to ask any questions. In one earlier study, A telephone hotline was considered important by mothers in this study for dealing with problems, and answering questions, although there was an indication in one earlier study that it was not heavily used (Stewart & Corvino, 1991).

Community support. Consistent support is important to new mothers. Besides nursing support in the early postpartum period, other types of support may be able to be provided in community programs. Pairing a new mother with an experienced mother may be one way to do this. New mothers' groups and early parenting classes run by community agencies are also ways for mothers to have contact with other mothers.

Getting figure back. 'Getting figure back' was a prominent concern for mothers in this study, particularly at six weeks after childbirth. Teaching should not only include information on postnatal exercises and exercises to strengthen perineal muscles, but also to assist the mother to identify realistic ways to make time to do these exercises. A video of suitable postnatal exercises could be sold, rented, or lent to mothers. The importance of good nutrition for the new mother should be stressed. Hints on how to plan quick, nutritious snacks and menus for easy, nutritious meals, as well as preparing and freezing meals prior to childbirth are ways in which nurses can teach new mothers. This information could be effectively provided in prenatal classes, or contained within written handouts.

Recommendations for further research

Ideas for further research come from the findings and limitations of this study. First, replication of this study is indicated using a sample from a different demographic background i.e. mothers who were not as highly educated or having such high family incomes as this group of mothers. It would also be advantageous to replicate this study using a control group who had no community nursing follow-up after hospital discharge. If such a group existed, it would be possible to more accurately attribute findings to the telephone follow-up in the experimental group. Replication of this study using a larger sample might be useful to see if the trends in differences between the groups become significant.

There have been no nursing studies identified where the effect of consistent telephone follow-up has been studied in relation to early maternity discharge. A comparative study is indicated, comparing the effect of telephone calls to new mothers made at different time intervals.

As mandatory early discharge for mothers and babies is relatively new, further studies are indicated to determine the outcomes of this process. A study comparing maternal outcomes in relation to home visits and telephone calls after early hospital discharge might also be useful in providing data for planning follow-up programs. Comparative studies looking at choice of early discharge versus mandatory early discharge after childbirth would be useful if such an option was available to mothers. A study to find out new mother's priorities for teaching and nursing care after early discharge would also be useful.

Anxiety of new mothers was not measured in this study. As the control group mothers had higher concerns, their anxiety and stress may have been more severe than that of the experimental group mothers. In future studies, it would be valuable to measure both stress and anxiety. Further studies looking at maternal confidence and confidence in infant care ability in relation to Bandura's theory of self-efficacy would add to the knowledge base about transition to motherhood. Lastly, as the accuracy of the findings about 'information sought' and 'sources of information' in this study are questionable, further study of these two variables is indicated.

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APPENDIX A

PARTICIPANT INFORMATION SHEET

University of Alberta
Faculty of Nursing

"CONCERNS AND CONFIDENCE OF NEW MOTHERS" STUDY

PARTICIPANT INFORMATION SHEET

Researcher: Judith Anne Haynes, R.N., Master of Nursing Candidate,
University of Alberta.

Dear Mother,

At the present time mothers like yourself are going home from hospital up to 48 hours after their baby is born. New mothers often have worries or concerns in the first few weeks after their baby is born. I am a registered nurse doing a research study for my Masters in Nursing degree. I am interested in finding out what concerns new mothers have after discharge from hospital. I also want to find out what information they need to have when they go home from hospital with their babies. As well, I am interested in finding out how much confidence new mothers have in looking after their babies and in being a mother.

I am looking for first time mothers to take part in this study. There will be two groups of mothers in the study. Using a system that is like a lottery, mothers will be placed in one of the two groups. Each group will have different contact with the researcher. One group will provide information by mail, and the other group will provide information by mail and telephone. It is not possible to tell beforehand to which group you will be assigned. Both groups of mothers will be asked to answer a set of questions 3 times in the six weeks after their baby is born. Each set of questions will take about 20 minutes to answer. The first set of questions will be completed in the hospital before discharge. The second set of questions will be mailed two weeks after discharge from hospital. The third set of questions will be mailed 6 weeks after discharge from hospital. There are no "right" or "wrong" answers to the questions. Mothers may choose not to answer any individual question. Stamped, addressed envelopes will be provided to return the completed forms. If the forms are not returned in two weeks, a reminder letter will be sent.

I am inviting you to take part in this study. If you take part there are no risks to you or your baby. There is no payment for being in the study. If you agree to take part you can stop at any time by returning the blank forms. Taking part in this study, or stopping, will not affect medical or nursing care for you or your baby. You may not get any direct benefits by taking part in the study. However, it is hoped that the results of the study will help to plan future nursing services to new mothers both in the hospital and at home.

During the study if it appears that your baby needs further care, a community health nurse will be asked to visit you and your baby.

If you agree to take part in the study, your name will not appear on any of the forms. A code number will be used instead, and this number will be known only by the researcher. Consent forms and any records that contain names, addresses, telephone numbers and code numbers will be kept in a locked drawer used only by the researcher. This information will be kept for 5 years. Information from the answers to the questions is used in the study but your name will not appear on any of the forms. Completed forms will be stored in a second locked drawer. The information from the completed forms is required to be kept for 7 years, but no names or addresses will appear on it. Any discussion about the results of the study with the members of my thesis committee will be private and confidential. No names will appear in the final report of the study. In the future, results from the study may be shared at meetings or conferences, or they may be published. If this is done, the identity of mothers taking part in the study will not be known. It is also possible that the results from this study may be used for research in the future. If this happens, the information will not contain any names, addresses, or telephone numbers. Ethical clearance will be obtained before any further research is done.

I will be visiting you in the next 24 hours to see if you have any questions about the study, and if you are willing to take part in it. If you are, I will ask you to sign a consent form. I will then ask you to answer the first set of questions. If you do take part in the study, I will provide you with phone numbers where you may contact me, or my supervisor, if you have questions about the study. A written report of the results of the study will be available to you a few months after the study is finished.

Yours sincerely,

Judith Haynes.

APPENDIX B

CONSENT FORM

University of Alberta
Faculty of Nursing

CODE:________

INFORMED CONSENT FORM

Research Project Title: "Concerns and confidence of new mothers"

Investigator: Judith Haynes, R.N., B.Sc.N., S.C.M.
Master in Nursing Candidate, Faculty of Nursing,
Graduate Student Office,
3rd Floor, Clinical Sciences Building.
University of Alberta.
Telephone: (home)

Supervisor: Dr Peggy Anne Field, R.N., Ph.D., S.C.M.
Professor, Faculty of Nursing,
5-103A Clinical Sciences Building,
University of Alberta, T6G 2G3
Telephone: (office)

Purpose: In this research study I am interested in new mothers like yourself who are discharged from hospital up to 48 hours after giving birth. I want to find out about their concerns and what information they need to know after they go home from hospital. I am also interested in finding out about their confidence in looking after their babies and in being a mother. It is hoped that the results from this study will help to plan nursing care in hospital and at home for new mothers and their babies.

Procedure: The study will last 6 weeks. There will be two groups of mothers in the study. The mothers in each group will have different contact with the researcher. One group will provide information by mail, and the other group will provide information by telephone and mail. Using a system like a lottery, mothers will be placed in one of the two study groups. It is not possible to tell beforehand to which group you will be assigned.

You will be asked to answer 3 sets of questions in the study. The first set will be completed before you leave the hospital. The second set will be mailed to you two weeks after you go home. The third set will be mailed to you six weeks after you go home from hospital. Each set of questions will take about 20 minutes to answer. You may choose not to answer any individual question. Stamped, addressed envelopes will be provided for you to return the second and third sets of forms. If the forms are not returned in two weeks, a reminder letter will be sent.

During the study, if it appears that your baby may need further care, the community health nurse will be asked to make a home visit to you and your baby

Participation: You do not have to be in this study if you do not want to. If you do take part in the study, you can stop at any time by returning the blank forms. Taking part in the study, or stopping, will not affect medical or nursing care for you or your baby. There will be no risks or harm to you or your baby if you do, or do not, take part in the study. You will not be paid for being in the study.

Your name will not appear in the study. A code number only will be used on the forms. The researcher is the only person who will know the code numbers. During the study all consent forms, names, addresses, telephone numbers and code numbers of the mothers taking part in the study will be kept in a locked drawer. The researcher is the only person who uses the drawer. These records are required to be kept for 5 years. The completed questions and the results of the study will be kept in a second locked drawer. These records are required to be kept for 7 years, but no names or addresses will appear on them.

Any discussion the researcher has about the results of the study with her thesis committee will be private and confidential. The final written thesis, and any verbal or written reports of the study, will not contain any information that will identify you. If any further research is done in the future using the results from this study, you will not be identified. Ethical clearance will be obtained for any future research.

A final written report of the study will be available to you. If you have any questions about this study, you can call the researcher or her supervisor at the numbers listed above.

Consent: The study has been described to me. My questions have been answered to my satisfaction. I know that I can contact the researcher or her supervisor at any time if I have other questions. I understand that I may choose not to answer any individual question. I may stop taking part in the study at any time by returning the blank forms by mail to the researcher. The researcher assures me that if I choose to stop no harm will come to myself or my baby, and our care will not be affected. I know that all records will be confidential. I understand that I may not receive any direct benefit from taking part in this study.

I have been given a copy of this form to keep.

This is to certify that I,________________________________, agree to take part in the research project, "Concerns and confidence of new mothers".

Participant: ____________________________ Date: ____________________

Researcher: ____________________________ Date: ____________________

APPENDIX C

INSTRUMENTS

APPENDIX C-1

SUBJECT INFORMATION SHEET

"CONCERNS AND CONFIDENCE OF NEW MOTHERS'

SUBJECT INFORMATION SHEET

CODE:________

GROUP:______

Delivery Date: ________________ **Time:** ________________

Discharge Date:______________**Time:**_______ **Hours after delivery:** _______

Interview Time: _________**hours after delivery**

MATERNAL DATA	INFANT DATA
	Sex: Male ______ Female ______
Perineum: Intact Episiotomy Laceration	**Birthweight:** _________ gm (lb oz)
	Discharge Weight: ________gm (lb oz)
Medical problems:	**Feeding:** Breast Bottle Part breast/ Part bottle
	Jaundice: Yes No
Staff concerns at discharge:	**Circumcision:** Yes No NA
Yes No	**Staff concerns at discharge:** Yes No
Concern:	**Concern:**

APPENDIX C-2

DEMOGRAPHIC / BIOGRAPHIC DATA SHEET

"CONCERNS AND CONFIDENCE OF NEW MOTHERS"

CODE

DEMOGRAPHIC/ BIOGRAPHIC DATA

1. **How was your labor and delivery experience?** (circle one)

Worse than expected	What I expected	Better than expected

2. **Do you feel ready to go home?** (circle one) Yes No

3. **Do you feel that you have received enough information in the hospital about how to look after yourself when you go home?** (circle one)

Yes No

If NO, what other information do you need?

4. **Do you feel that you have received enough information in the hospital about how to look after your baby when you go home?** (circle one)

Yes No

If NO, what other information do you need?

5. **Will you have help at home after discharge from hospital?** Yes No
If yes, from whom? (circle all that apply)

Husband/partner Mother Mother-in-law Sister Other

6. **Did you attend pre-natal classes?** (circle one) Yes No

7. **What is your age?** (circle one) Below 20 years / 20 - 30 years / Over 30 years

8. **What is your highest education level?** (circle one)

Junior High	High School	Some College/ University	College Diploma	Undergraduate Degree	Graduate Degree

9. **What is your family income ?** (circle one)

$19,999 & under	$20,000-$29,999	$30,000-$39,999	$40,000-$49,999	$50,000 & over

APPENDIX C-3

MATERNAL CONCERNS AND INFORMATION SCALE

ADMINISTRATION #1 #2 #3

MATERNAL CONCERNS AND INFORMATION SCALE

CODE:________

(Adapted from Rovers & Isenor, 1986)

This questionnaire is about concerns or worries which mothers may have following the birth of a baby.

A **Concern or Worry** is described as *an uneasiness of mind, or an anxious feeling, that you have because you are not sure that you know what to do about this topic.*

I am going to list for you specific topics which are known to be a concern or worry for new mothers. The three main areas where new mothers sometimes have concerns are:

1. caring for yourself
2. caring for your baby
3. making personal and family adjustments for the new baby.

Not all areas are concerns for all mothers, nor do these concerns happen at the same time for all mothers. Some will cause mothers to worry at some time during the first six weeks after the baby is born.

I would ask you to take a few minutes and think about each topic listed, then circle your degree of worry for each topic **at this time. If a topic does not apply to you, please circle NA (not applicable). For example, if you do not have stitches, then circle NA for the question about stitches.**
An example is presented below:

Changing diaper:	1	2	3	4	5	6	7	NA
	No Worry						Great Worry	Not Applicable

Would you now please complete the scale in the following way:

1. **Circle your degree of concern or worry for each topic listed.** If any topic does not apply to you then circle NA for that particular item.
2. For each topic **record Yes or No whether you sought information on this topic**
3. **If you sought information on a topic, check ( ) who provided that information** i.e. nurse (N), doctor (D), relative (R), friend (F), book/pamphlet (B), or other (O). Check every column that applies e.g. you may have asked a friend and a doctor. **If you asked a friend who is a doctor or a nurse, please check the nurse or doctor column if you asked that person because he/she was a nurse or doctor.**

Source of information codes:
Nurse (N), doctor (D), relative (R), friend (F), book/pamphlet (B), other (O)

Topic	Concern or worry	Information Sought		Source of Information					
		Yes	No	N	D	R	F	B	O
A) Care of Self									
1. **Breasts**: engorgement, sore nipple, leaking, duct plugged, infection.	1 2 3 4 5 6 7 NA								
2. **Perineum**: stitches, soreness	1 2 3 4 5 6 7 NA								
3. **Vaginal flow**: changes, restart of period	1 2 3 4 5 6 7								
4. **Passing urine**	1 2 3 4 5 6 7								
5. **Bowel movements**	1 2 3 4 5 6 7								
6. **Hemorrhoids**	1 2 3 4 5 6 7 NA								
7. Changes in **skin, hair**	1 2 3 4 5 6 7 NA								
8. **Becoming tired**, adjusting sleep, time for rest	1 2 3 4 5 6 7								
9. Your **diet/nutrition**	1 2 3 4 5 6 7								
10. **Postnatal exercises** which exercises, how often, how long	1 2 3 4 5 6 7								
11. **Getting figure back**	1 2 3 4 5 6 7								
B) Care of Baby									
1. **Bathing** baby	1 2 3 4 5 6 7								
2. **Care of baby's cord**	1 2 3 4 5 6 7 NA								

Source of information codes:
Nurse (N), doctor (D), relative (R), friend (F), book/pamphlet (B), other (O)

Topic	Concern / Worry	Information Sought		Source of Information					
		Yes	No	N	D	R	F	B	O
B) Care of baby (cont.) 3. **Care of foreskin**	1 2 3 4 5 6 7 NA								
4. **Care of circumcision**	1 2 3 4 5 6 7 NA								
5. **Breastfeeding**: how long, how often, positioning,	1 2 3 4 5 6 7 NA								
6. **Bottlefeeding**: how often, formula preparation	1 2 3 4 5 6 7 NA								
7. **Weight gain** for baby: what is normal	1 2 3 4 5 6 7								
8. **Skin**: rashes	1 2 3 4 5 6 7 NA								
9. **Jaundice** in baby	1 2 3 4 5 6 7 NA								
10. **Behaviour of baby**: what is normal, signs of illness, colic	1 2 3 4 5 6 7								
11. Baby's **sleep patterns**: how long between feeds; at night	1 2 3 4 5 6 7								
12. Baby's **crying**: how to tell what it means.	1 2 3 4 5 6 7								
13. Baby's **wet diapers**: how many per day	1 2 3 4 5 6 7								

Source of information codes:
Nurse (N), doctor (D), relative (R), friend (F), book/pamphlet (B), other (O)

Topic	Concern/ Worry	Information Sought		Source of Information					
		Yes/	No	N	D	R	F	B	O
B) Care of baby (cont)									
14. Baby's **soiled diapers:** how often, how much, what is normal, loose stools, constipation	1 2 3 4 5 6 7								
15. **Normal infant development**	1 2 3 4 5 6 7								
16. **Infant safety**: car seats,home safety	1 2 3 4 5 6 7								
C) Personal and family adjustment									
1. **Fitting baby into family**: balancing baby care, care of others, housework	1 2 3 4 5 6 7								
2. **Emotional changes**: blues, feeling tied down, finding time for self	1 2 3 4 5 6 7								
3. **Family planning**: method acceptable for self and partner	1 2 3 4 5 6 7 NA								
4. **Sexual intercourse**: when to resume, differences to expect	1 2 3 4 5 6 7 NA								

APPENDIX C-4

OVERALL MATERNAL CONFIDENCE SCALE

OVERALL MATERNAL CONFIDENCE SCALE

(Rovers & Fuller)

CODE:________

This scale is used to record how confident you feel as a mother **at this time**.

Confidence is described as: *Feeling certain that you have all the information and skills that you need to deal with the situation easily*

Example:

	1	2	3	4	5	6	7
I will have no difficulty returning to work	Strongly disagree						Strongly agree

Would you please now circle your degree of confidence for each statement:

1. I am very confident in my ability to be a good mother. 1 2 3 4 5 6 7

2. I am satisfied that I can regulate the demands of husband, baby, and housework with no difficulty. 1 2 3 4 5 6 7

3. I am confident in my ability to handle most problems which may arise. 1 2 3 4 5 6 7

4. So far I enjoy being a mother. 1 2 3 4 5 6 7

5. I am having no difficulty taking care of my baby. 1 2 3 4 5 6 7

6. I usually understand what my baby needs when he/she cries. 1 2 3 4 5 6 7

7. I feel that I am adjusting easily to motherhood. 1 2 3 4 5 6 7

8. I am sure I can meet all the demands of caring for a child 1 2 3 4 5 6 7

9. I have no problems making decisions about the care I give my baby. 1 2 3 4 5 6 7

10. I feel that my mothering abilities are better than most people's. 1 2 3 4 5 6 7

11. I am able to help or advise other new mothers 1 2 3 4 5 6 7

APPENDIX C- 5

CONFIDENCE IN INFANT CARE SCALE

CONFIDENCE IN INFANT CARE SCALE CODE: ________

(Adapted from Rovers & Fuller)

This scale records how confident you feel in caring for your baby **at this time**. **Confidence is described as**: *Feeling certain that you have all the information and skills you need to deal with a situation easily.*

Example: Changing diaper: 1 2 3 4 5 6 7 NA

No Confidence — Very Confident

Would you please now circle your degree of confidence for each topic:

1. **Bathing baby.** 1 2 3 4 5 6 7
2. **Care of baby's cord.** 1 2 3 4 5 6 7 NA
3. **Breastfeeding baby**: knowing how often, how long; introduction of solids 1 2 3 4 5 6 7 NA
4. **Bottlefeeding baby:** knowing how often, how much; preparation of formula; introduction of solids 1 2 3 4 5 6 7 NA
5. **Weight gain for baby**: how to know if gaining weight 1 2 3 4 5 6 7
6. **Baby's behaviour**: knowing difference between normal/abnormal at this age; how to tell if sick, colicky. 1 2 3 4 5 6 7
7. **Baby's sleep pattern**: knowing how long to allow between feedings and at night. 1 2 3 4 5 6 7
8. **Baby's crying**: knowing what the cry means 1 2 3 4 5 6 7
9. **Baby's wet diapers**: knowing what is normal 1 2 3 4 5 6 7
10. **Baby's soiled diapers**: knowing what is normal; what to do for constipation, loose stools. 1 2 3 4 5 6 7
11. **Normal development of baby**: knowing what is normal at this age 1 2 3 4 5 6 7
12. **Infant safety**: using car seat, home safety 1 2 3 4 5 6 7

APPENDIX C - 6

TELEPHONE INTERVIEW FORMAT

TELEPHONE INTERVIEW FORMAT

The researcher will telephone the mother and identify herself. She will then ask if it is a convenient time for the mother to talk. If not, what time would be convenient to call back?

Questions:

1. How are you feeling?
2. How is your baby?
3. Do you have any questions or concerns?

If there are no questions or concerns, or after any questions or concerns have been dealt with, the researcher will then list the items on the Telephone Interview Sheet dealing with self-care for the mother and infant care. She will ask if those items are a concern, and if so, how is the concern being dealt with. The mother and the researcher may need to discuss the concern and come to a joint decision on how to deal with it. If it appears that another resource needs to be contacted, the researcher will suggest that the mother contacts the appropriate person. The researcher will have a list of telephone numbers to assist the mother in making the contact. The next day the researcher will check with the mother about the outcome of the concern. If the mother has not made contact with the resource person, and the item is still a concern, she will ask the mother if she can make the initial contact for her.

If during a conversation with a mother the researcher becomes suspicious that there is child abuse, the researcher will discuss this with the mother, and contact the community health nurse to make a home visit to the mother and the baby.

APPENDIX C - 7

TELEPHONE INTERVIEW SHEET

CODE: ________

'CONCERNS AND CONFIDENCE OF NEW MOTHERS'
TELEPHONE INTERVIEW SHEET

DAY #1 2 3 4 5 6 7
Date of call:____________
Length of call:______ min.
Unable to contact

MOTHER

How are you?

Concerns:

How dealt with?

INFANT

How is your baby?

Concerns?

How dealt with?

Visits / Phone calls made past 24 hrs? Yes No

If yes, to whom?
Researcher________
Obstetrician________
Pediatrician________
Family Doctor______
C.H.N.___________
Other____________

Follow up apts? Yes No

Checklists	Concern			
	No	Minor	Major	NA
MATERNAL Breasts: nipples tender, cracked lumps,engorged				
Perineum: stitches,sore				
Vaginal flow				
Voiding				
Bowel Movts				
Hemorrhoids				
Rest / sleep				
Fluids / nutrition				
Exercises				
INFANT Bathing				
Cord care				
Circumcision				
Breastfeeding				
Bottlefeeding				
Weight gain				
Skin: rashes				
Jaundice				
Behaviour				
Sleep patterns				
Crying				
Voiding				
Bowel Movts				
Development				
Safety				
ADJUSTMENT Family Adjust.				
Emotions				

APPENDIX C - 8

INTERMEDIATE QUESTIONNAIRE

EXPERIMENTAL GROUP

CODE

"CONCERNS AND CONFIDENCE OF NEW MOTHERS"
INTERMEDIATE QUESTIONNAIRE

Would you please answer the following questions:

1. **Were you happy about going home from hospital within 48 hours after giving birth?** (circle one) Yes

If NO, why not?

2. **Which of the following statements describes your experience with your baby over the past 2 weeks?** (circle one)

Easier than expected Same as expected More difficult than expected

3. **How are you feeding your baby now?** (circle one)

Totally breastfeeding Totally bottlefeeding Part breastfeeding/ Part bottlefeeding

4. **Did the information you received in the hospital about caring for yourself prepare you for the first 2 weeks at home ?** (circle one) Yes No

If NO, what else did you need to know?

5. **In the past 2 weeks, have you had any problems regarding your own care ?**

Yes No **If YES, what was the problem?**

If YES, what action did you take? (Circle whichever is applicable)

Called hospital "Warm Line"	Called Doctor	Called Community Health Nurse	Called Relative/ Friend	Went to Emergency	None	Called Researcher

6. Did the information you received in the hospital about caring for your baby prepare you for the first 2 weeks at home with your new baby? (circle one)

Yes No If NO, what else did you need to know?

7. In the past 2 weeks have you had any problems concerning the care of your baby? (circle one)

Yes No If YES, what was the problem?

If YES, what action did you take? (Circle whichever is applicable)

Called hospital "Warm Line"	Called Doctor	Called Community Health Nurse	Called Relative/ Friend	Went to Emergency	None	Called Researcher

8. How can nurses give you and your baby better care in the first two weeks after you go home from hospital?

9. Were the telephone calls from the nurse researcher helpful? Yes No

If YES, what was most helpful?

If NO, what would have been better?

Please feel free to add any other comments.

Thank you for completing this questionnaire. Please return it in the envelope provided.

APPENDIX C - 9

INTERMEDIATE QUESTIONNAIRE

CONTROL GROUP

CODE:

"CONCERNS AND CONFIDENCE OF NEW MOTHERS"
INTERMEDIATE QUESTIONNAIRE

Please answer the following questions:

1. Were you happy about going home from hospital within 48 hours after giving birth? (circle one)

Yes No **If NO, why not?**

2. Which of the following statements describes your experience with your baby over the past 2 weeks? (circle one)

Easier than expected Same as expected More difficult than expected

3. How are you feeding your baby now? (circle one)

Totally breastfeeding Totally bottlefeeding Part breastfeeding/ Part bottlefeeding

4. Did the information you received in the hospital on caring for yourself prepare you for the first 2 weeks at home ? (circle one) Yes No

If NO, what else did you need to know?

5. In the past 2 weeks, have you had any problems concerning your own care ?

Yes No **If YES, what was the problem?**

If YES, what action did you take? (circle whichever is applicable)

Called hospital "Warm Line"	Called Doctor	Called Community Health Nurse	Called Relative/ Friend	Went to Emergency	None

6. Did the information you received in the hospital on caring for your baby prepare you for the first 2 weeks at home with your baby? (circle one)

Yes No If NO, what else did you need to know?

7. In the past 2 weeks, have you had any problems concerning the care of your baby? (circle one)

Yes No If YES, what was the problem?

If YES, what action did you take? (Circle whichever is applicable)

Called hospital "Warm Line"	Called Doctor	Called Community Health Nurse	Called Relative/ Friend	Went to Emergency	None

8. How can nurses give you and your baby better care in the first two weeks after you go home from hospital?

Please feel free to add any other comments:

Thank you for completing this questionnaire. Please return it in the envelope provided.

APPENDIX C - 10

SUMMARY QUESTIONNAIRE

EXPERIMENTAL GROUP

CODE:

"CONCERNS AND CONFIDENCE OF NEW MOTHERS"
SUMMARY QUESTIONNAIRE

Please answer the following questions:

1. **Which of the following statements describes your experience with your baby over the past 4 weeks?** (circle one)

Easier than expected Same as expected More difficult than expected

2. **How are you feeding your baby now?** (circle one)

Totally breastfeeding Totally bottlefeeding Part breastfeeding/ Part bottlefeeding

3. **Did the information you received in the hospital on caring for yourself prepare you for the last 4 weeks at home ?** (circle one) Yes No

If NO, what else did you need to know?

4. **In the past 4 weeks, have you had any problems concerning your own care ?**

Yes No **If YES, what was the problem?**

If YES, what action did you take? (circle whichever applicable)

Called hospital "Warm Line"	Called Doctor	Called Community Health Nurse	Called Relative/ Friend	Went to Emergency	None	Called Researcher

5. **Did the information you received in the hospital on caring for your baby prepare you for the last 4 weeks at home with your baby?** (circle one)

Yes No

If NO, what else did you need to know?

6. In the past 4 weeks, have you had any problems concerning the care of your baby? (circle one)

Yes No **If YES, what was the problem?**

If YES, what action did you take? (Circle whichever is applicable)

Called hospital "Warm Line"	Called Doctor	Called Community Health Nurse	Called Relative/ Friend	Went to Emergency	None	Called Researcher

10. How can nurses give you and your baby better care in the first 6 weeks after you go home from the hospital?

Please feel free to add any other comments:

Thank you for completing this questionnaire. Please return it in the envelope provided.

I would like to receive a final report of the study "Concerns and confidence of new mothers".

Name:______________________________

Address:____

Postal Code:____________________

APPENDIX C - 11

SUMMARY QUESTIONNAIRE

CONTROL GROUP

CODE:

"CONCERNS AND CONFIDENCE OF NEW MOTHERS" SUMMARY QUESTIONNAIRE

Please answer the following questions:

1. Which of the following statements describes your experience with your baby over the past 4 weeks? (circle one)

Easier than expected   Same as expected   More difficult than expected

2. How are you feeding your baby now? (circle one)

Totally breastfeeding   Totally bottlefeeding   Part breastfeeding/ Part bottlefeeding

3. Did the information you received in the hospital on caring for yourself prepare you for the last 4 weeks at home ? (circle one)   Yes   No

If NO, what else did you need to know?

4. In the past 4 weeks, have you had any problems concerning your own care ?

Yes   No   **If YES, what was the problem?**

If YES, what action did you take? (circle whichever applicable)

Called hospital "Warm Line"	Called Doctor	Called Community Health Nurse	Called Relative/ Friend	Went to Emergency	None

5. Did the information you received in the hospital on caring for your baby prepare you for the last 4 weeks at home with your baby? (circle one)

Yes   No   **If NO, what else did you need to know?**

6. In the past 4 weeks, have you had any problems concerning the care of your baby? (circle one)

Yes No **If YES, what was the problem?**

If YES, what action did you take? (Circle whichever is applicable)

Called hospital "Warm Line"	Called Doctor	Called Community Health Nurse	Called Relative/ Friend	Went to Emergency	None

10. How can nurses give you and your baby better care in the first 6 weeks after you go home from the hospital?

Please feel free to add any other comments:

Thank you for completing this questionnaire. Please return it in the envelope provided.

I would like to receive a copy of the final report of the study "Concerns and Confidence of New Mothers".

Name:

Address:

Postal code:

APPENDIX D

LETTERS TO SUBJECTS

APPENDIX D - 1

LETTER TO ACCOMPANY QUESTIONNAIRE PACKAGE #2

Dear Mother,

By now you have been home from hospital with your baby for almost two weeks. You may be finding that life with a new baby is an adjustment.

Attached is the second set of questions in the "Concerns and confidence of new mothers" study. I would be most grateful if you would please take a few minutes out of your busy schedule to complete these forms. You may notice that the scales are the same ones you completed in the hospital. The reason for this is that I want to find out how your concerns, your need for information, and your confidence in looking after your baby and being a mother have changed over the past two weeks. **When you have completed the forms, please place them in the attached stamped and addressed envelope, and return them to me by mail.**

Thank you for continuing to take part in the study. The last set of questions will be mailed to you in approximately one month.

Yours sincerely,

Judith Hayne

APPENDIX D - 2

LETTER TO ACCOMPANY QUESTIONNAIRE PACKAGE #3

Dear Mother,

Your baby is now 6 weeks old, and I hope that life is settling down to a normal family routine.

Enclosed is the last set of questions in the "Concerns and confidence of new mothers" study for you to answer. I would be most grateful if you would please take a few minutes to complete these forms. You may notice that the three scales are the same ones you have filled out twice before. The reason for this is that I want to find out how your concerns, information needs, and confidence in looking after your baby and being a mother have changed over the past four weeks. **When you have completed the forms, please place them in the attached stamped and addressed envelope, and return them to me by mail.**

The results of the study will be ready in a few months. At that time, a written final report will be available. **If you would like to receive a report, please complete the form at the bottom of the attached questionnaire.**

Please accept my sincere thanks for taking part in this study. Without the support of mothers like you it could not have been completed.

Best wishes to you and your family,

Yours sincerely,

Judith Haynes.

APPENDIX D - 3

REMINDER LETTER

Date:

Dear ,

It has been two weeks since you were sent the set of questions to be completed for the "Maternal Concerns and Confidence " study. I have not received the completed forms yet. I am wondering if it is because you have been so busy with your new baby, or if you do not wish to continue to take part in the study.

If you still wish to take part in the study, would you please complete the set of questions as soon as possible and return the forms to me in the stamped addressed envelope provided. If you do not wish to continue to take part in this study, I would ask that you send the blank forms back to me in the envelope provided.

If you did not receive the questionnaire, please call me at 481-7818. If you have already mailed the completed questionnaire, please disregard this letter.

Thank you for your participation,

Yours sincerely,

Judith Haynes.

APPENDIX E

TABLES

Table E-1

Demographic data

Age of Subjects

Group	<20 years	20 - 30 years	>30 years	χ^2	df	p(0.05)
Exper.	4	29	17	0.01	2	.996
Control	4	28	17			
% sample	8.1%	57.6%	34.3%			

Highest Education Level

Group	Junior High	High School	Some College/ University	College Diploma	Undergrad. Degree	Graduate Degree	χ^2 (5df)	p (0.05)
Exper.	2	8	12	15	8	5	4.14	.529
Control	2	8	9	9	15	6		
% Sample	4%	16.2%	21.2%	24.2%	23.2%	11.1%		

Family Income

Group	$19,999 & under	$20,000- $29,999	$30,000- $39,999	$40,000- $49,999	$50,000 & over	No Response	χ^2 (5df)	p (0.05)
Exper.	9	4	4	9	23	1	5.68	.339
Control	4	6	10	7	20	2		
% Sample	13.1%	10.1%	14.1%	16.2%	43.4%	3.0%		

Prenatal classes attended

Group	Attended	Not attended	χ^2	df	Sig.(p=0.05)
Sample	80 (80.8%)	19 (19.2%)			
Exper.	44	6			
Control	36	13	3.37	1	0.066

Interview times after birth

	Experimental group (n=50)			Control group (n=49)					
	Mean Hrs	SD	Range	Mean Hrs	SD	Range	t	df	p(0.05)
Interview	36.78	8.92	7 - 51	38.04	8.68	18 - 56	-0.71	97	0.48

Infant Gender

Group	Male	Female	χ^2	df	p(0.05)
Experimental	27	23	.271	1	.603
Control	29	20			

Infant Birthweight

Group	Mean Gm	SD	Range Gm	t	df	p(0.05)
Whole sample	3414	387.20	2528 - 4205			
Experimental	3401	355.56	2528 - 4034	-0.34	97	.736
Control	3427	420.51	2699 - 4205			

Table E-2 Obstetric and biographic data

Perineum

Group	Intact	Episiotomy	Laceration	χ^2	df	p(0.05)
Exper.	5	24	21	2.03	2	.362
Control	7	28	14			
% Sample	12.1%	52.5%	35.4%			

Experience of labor and delivery

Group	Worse than expected	As expected	Better than expected	No response	χ^2	df	p(0.05)
Exper.	23	7	18	2	2.81	3	.421
Control	24	10	15	0			
% Sample	47.5%	17.2%	33.3%	2.0%			

Experience with baby since discharge

Chi square for differences between and within Experimental and Control Groups at 2nd & 3rd questionnaire administrations

Group	Admin.	Easier	As expected	More difficult	NR	χ^2	df	p(0.05)
Exper.	M2	12 (25.5%)	18 (38.3%)	17 (36.2%)		0.20	2	.907
Control	M2	10 (22.2%)	19 (42.2%)	16 (35.6%)				
Exper.	M3	15 (32.6%)	20 (43.5%)	10 (21.7%)	1	0.16	3	.984
Control	M3	14 (32.6%)	20 (46.5%)	8 (18.6%)	1			
Exper.	M2	12	18	17		142.13	6	.000 *
Exper.	M3	15	20	10				
Control	M2	10	19	16		137.86	6	.000 *
Control	M3	14	20	8				

* significant NR = No response

Table E-3 Frequency and rank order of High Concerns at each questionnaire administration

Concerns	M1				M2				M3			
	Exper. Gp (n=50)		Control Gp (n=49)		Exper. Gp (n=47)		Control Gp (n=45)		Exper. Gp (n=46)		Control Gp (n=43)	
	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank	Freq.	Rank
Breasts	10	2	3	6	4	2	7	1	2	3	1	4
Perineum	8	4	8	3	1	5	2	4	0	-	1	4
Vaginal flow	4	7	0	-	2	4	4	3	2	3	0	-
Passing urine	2	8	2	7	1	5	1	5	0	-	2	3
Bowel movements	9	3	12	2	3	3	4	3	2	3	1	4
Hemorrhoids	4	7	8	3	2	4	1	5	3	2	1	4
Changes in skin/hair	0	-	0	-	0	-	0	-	0	-	0	-
Becoming tired	9	3	14	1	4	2	7	1	2	3	4	2
Diet/Nutrition	5	6	5	5	3	3	2	4	2	3	1	4
Postnatal exercises	6	5	7	4	1	5	7	1	0	-	2	3
Getting figure back	12	1	8	3	6	1	6	2	5	1	6	1
Subtotal	69		67		27		41		17		19	
Bathing	8	5	6	4	2	5	3	7	0	-	0	-
Care of cord	5	6	2	7	2	5	2	8	0	-	0	-
Care of foreskin	1	9	1	8	0	-	0	-	0	-	0	-
Care of circumcision	3	8	2	7	0	-	1	9	0	-	0	-
Breastfeeding	13	2	20	1	6	1	8	3	2	2	0	-
Bottlefeeding	1	10	0	-	0	-	1	9	0	-	0	-
Weight gain	5	6	5	5	4	3	6	4	2	2	1	3
Skin	4	7	6	4	3	4	2	8	1	3	1	3
Jaundice	1	9	3	6	4	3	3	7	1	3	0	-
Behaviour	14	1	11	2	5	2	9	2	3	1	2	2
Sleep patterns	9	4	11	2	6	1	9	2	2	2	2	2
Crying	8	5	9	3	6	1	10	1	3	1	2	2
Wet diapers	5	6	3	6	2	5	3	7	1	3	0	-
Soiled diapers	5	6	6	4	3	4	4	6	2	2	2	2
Normal development	10	3	6	4	3	4	5	5	1	3	3	1
Infant safety	9	4	5	5	1	6	3	7	0	-	1	3
Subtotal	101		96		47		69		18		14	
Fitting baby into family	6	2	10	1	4	1	7	2	3	1	3	1
Emotional changes	8	1	7	2	3	2	9	1	2	2	3	1
Family planning	5	3	4	3	2	3	3	3	2	2	1	3
Sexual intercourse	4	4	0	-	4	1	3	3	1	3	2	2
Subtotal	23		21		13		22		8		9	
Total # concerns	193		184		87		132		43		42	

Table E-4 Frequency and rank order of Low Concerns at each questionnaire administration

Concerns	M1 Exper. Gp (n=50) Freq.	Rank	M1 Control Gp (n-49) Freq.	Rank	M2 Exper. Gp (n=47) Freq.	Rank	M2 Control Gp (n-45) Freq.	Rank	M3 Exper. Gp (n=46) Freq.	Rank	M3 Control Gp (n=43) Freq.	Rank
Breasts	23	2	21	2	22	4	22	3	12	6	8	4
Perineum	15	6	19	4	27	2	21	3	8	7	8	4
Vaginal flow	25	1	32	1	28	1	22	2	16	5	16	2
Passing urine	9	7	8	9	5	10	6	9	2	9	2	7
Bowel movements	16	5	13	7	11	7	7	8	7	8	6	5
Hemorrhoids	5	8	7	10	6	9	8	6	2	9	10	3
Changes in skin/hair	5	8	5	11	9	8	7	8	7	8	5	6
Becoming tired	19	3	12	8	22	4	20	4	23	4	18	1
Diet/Nutrition	18	4	16	6	24	3	23	1	24	3	18	1
Postnatal exercises	23	2	20	3	19	6	16	6	25	2	18	1
Getting figure back	16	5	17	5	20	5	17	5	27	1	16	2
Subtotal	174		170		193		169		153		125	
Bathing	17	5	18	4	25	2	16	6	17	6	7	9
Care of cord	20	3	19	3	13	10	11	9	3	12	2	12
Care of foreskin	3	13	5	8	7	11	5	11	2	13	5	10
Care of circumcision	5	12	7	9	2	13	2	12	0	-	3	11
Breastfeeding	11	10	16	5	21	5	14	7	13	8	15	6
Bottlefeeding	1	14	1	12	5	12	5	10	5	11	5	10
Weight gain	19	4	21	2	24	3	24	1	19	5	18	2
Skin	26	1	19	3	14	9	22	2	17	6	16	4
Jaundice	6	11	6	7	5	12	6	10	3	12	5	10
Behaviour	12	9	18	4	18	6	16	6	24	2	19	1
Sleep patterns	19	4	18	4	25	2	17	5	22	4	17	3
Crying	13	8	13	7	26	1	22	2	25	1	19	1
Wet diapers	15	7	23	1	22	4	13	8	10	10	11	7
Soiled diapers	22	2	21	2	24	3	21	3	16	7	15	5
Normal development	16	6	21	2	16	7	19	4	23	3	16	4
Infant safety	15	7	21	2	15	8	14	7	12	9	9	8
Subtotal	220		247		262		227		211		182	
Fitting baby into family	16	3	8	4	28	1	18	2	27	1	22	1
Emotional changes	22	1	21	1	23	2	23	1	23	2	12	4
Family planning	11	4	20	2	13	4	14	4	14	4	13	3
Sexual intercourse	19	2	15	3	14	3	15	3	18	3	19	2
Subtotal	68		64		78		70		82		66	
Total # concerns	462		481		533		466		446		373	

Table E-5 Concerns about Self Care

Repeated Measures Anova for differences by group and questionnaire administration

Variable	Between groups			Between Administrations			Interaction		
	F	df	p (0.05)	F	df	p (0.05)	F	df	p (0.05)
1. Breasts	0.56	76,1	.456	35.56	152,2	.000 *	0.63	152,2	.533
2. Perineum	0.06	65,1	.807	50.13	130,2	.000 *	0.24	130,2	.785
3. Vaginal flow	0.01	85,1	.914	6.00	170,2	.003 *	2.12	170,2	.124
4. Passing urine	0.77	85,1	.383	2.95	170,2	.055 *	0.89	170,2	.411
5. Bowel movements	0.13	85,1	.719	38.26	170,2	.000 *	0.88	170,2	.418
6. Hemorrhoids	0.19	29,1	.669	7.89	58,2	.001 *	1.36	58,2	.264
7. Changes in skin, hair	0.17	39,1	.678	0.45	78,2	.638	0.29	78,2	.751
8. Becoming tired	2.26	85,1	.136	33.11	170,2	.000 *	0.01	170,2	.988
9. Diet/Nutrition	0.48	85,1	.489	1.59	170,2	.206	0.60	170,2	.551
10. Postnatal exercises	2.41	85,1	.125	3.70	170,2	.027 *	0.01	170,2	.988
11. Getting figure back	0.00	85,1	.974	0.69	170,2	.501	2.03	170,2	.134

* significant

Table E-6 Concerns about Self Care
Means for Experimental & Control Groups at each Questionnaire Administration

		Experimental Group			Control Group		
Variable	Admin.	N	Mean	SD	N	Mean	SD
1.Breasts	M1	50	3.82	1.84	49	3.31	1.51
	M2	47	2.81	1.94	45	3.00	1.71
	M3	46	2.30	2.43	43	1.98	1.97
2.Perineum	M1		3.70	2.26		4.18	2.31
	M2		2.91	2.22		3.55	2.76
	M3		2.65	2.88		3.21	3.37
3.Vaginal flow	M1		2.48	1.52		2.26	0.99
	M2		2.19	1.19		2.64	1.56
	M3		1.96	1.45		1.81	1.07
4.Passing urine	M1		1.44	1.09		1.67	1.39
	M2		1.45	1.16		1.30	0.90
	M3		1.07	0.33		1.35	1.31
5.Bowel movements	M1		3.50	2.00		3.61	2.01
	M2		1.79	1.46		2.20	1.83
	M3		1.59	1.39		1.33	1.02
6.Haemorrhoids	M1		3.75	2.30		3.79	2.32
	M2		1.93	1.50		2.31	1.90
	M3		1.93	1.50		1.83	1.09
7.Changes in skin, hair	M1		1.05	0.32		1.20	0.40
	M2		1.03	0.32		1.05	0.33
	M3		1.02	0.31		1.04	0.25
8.Becoming tired	M1		3.62	1.73		4.16	1.77
	M2		3.21	1.40		3.70	1.61
	M3		2.35	1.46		2.67	1.66
9.Diet/nutrition	M1		2.46	1.75		2.47	1.78
	M2		2.55	1.53		2.88	1.54
	M3		2.30	1.28		2.42	1.47
10.Postnatal exercises	M1		2.62	1.70		2.98	1.78
	M2		2.45	1.40		2.95	2.02
	M3		2.02	1.06		2.40	1.51
11.Getting figure back	M1		3.44	2.12		3.24	1.94
	M2		3.17	1.84		3.11	1.88
	M3		2.82	1.68		3.14	1.87

Table E-7 Concerns about Baby

Repeated measures Anova for differences by group & questionnaire administration

Variable	Between groups			Between administrations			Interaction		
	F	df	p (0.05)	F	df	p (0.05)	F	df	p (0.05)
1. Bathing	0.11	85,1	.738	33.57	170,2	.000 *	1.73	170,2	.181
2. Care of cord	0.22	84,1	.643	2.37	168,2	.096	0.11	168,2	.892
3. Care of foreskin	1.60	24,1	.218	10.92	48,2	.000 *	1.38	48,2	.262
4. Care circumcision	0.11	21,1	.746	20.10	42,2	.000 *	3.74	42,2	.032*
5. Breastfeeding	1.44	69,1	.234	49.96	138,2	.000 *	0.64	138,2	.528
6. Bottlefeeding	1.64	9,1	.232	7.08	18,2	.005 *	1.18	18,2	.329
7. Weight gain	0.20	85,1	.658	19.13	170,2	.000 *	0.58	170,2	.563
8. Skin	0.14	59,1	.711	0.70	118,2	.496	0.23	118,2	.796
9. Jaundice	0.24	17,1	.628	7.06	34,2	.003 *	0.44	34,2	.650
10. Behavior	0.05	85,1	.819	11.63	170,2	.000 *	1.22	170,2	.299
11. Sleep patterns	0.13	85,1	.715	21.97	170,2	.000 *	0.23	170,2	.794
12. Crying	0.29	85,1	.590	16.04	170,2	.000 *	1.12	170,2	.328
13. Wet diapers	0.01	85,1	.908	24.29	170,2	.000 *	0.05	170,2	.950
14. Soiled diapers	0.05	85,1	.829	12.37	170,2	.000 *	0.72	170,2	.486
15. Normal development	0.41	85,1	.523	15.27	170,2	.000 *	2.23	170,2	.111
16. Infant safety	0.16	84,1	.691	16.61	168,2	.000 *	0.20	168,2	.822

* significant

Table E-8 Concerns about Baby
Means of Experimental & Control Groups at each Administration

		Experimental Group			Control Group		
Variable	Admin.	N	Mean	SD	N	Mean	SD
1.Bathing	M1	50	3.12	1.85	49	3.08	1.65
	M2	47	1.98	1.26	45	2.52	1.72
	M3	46	1.52	0.73	43	1.45	1.02
2.Care of cord	M1		2.78	1.84		2.65	1.66
	M2		2.39	2.04		2.02	1.45
	M3		2.00	2.56		2.02	2.62
3.Care of foreskin	M1		3.15	1.70		3.20	1.75
	M2		1.67	1.51		2.13	1.60
	M3		1.21	0.91		1.89	1.09
4.Care circumcision	M1		3.85	2.15		2.75	2.95
	M2		1.31	1.02		2.42	2.67
	M3		1.00	0.34		1.33	0.45
5.Breastfeeding	M1		4.38	2.19		4.77	2.17
	M2		3.89	2.49		4.14	2.40
	M3		3.27	2.06		3.00	2.76
6.Bottlefeeding	M1		4.20	2.96		2.80	2.20
	M2		2.23	1.97		3.13	1.98
	M3		1.90	1.23		1.74	1.35
7.Weight gain	M1		3.06	1.67		3.19	1.59
	M2		2.63	1.64		3.02	1.78
	M3		1.98	1.39		2.00	1.29
8.Skin	M1		2.76	1.52		3.02	1.86
	M2		4.41	3.26		3.22	2.49
	M3		3.87	2.59		3.02	2.56
9.Jaundice	M1		3.43	1.55		2.94	1.80
	M2		2.23	1.52		2.45	1.35
	M3		2.05	1.27		1.45	0.96
10.Behavior	M1		4.02	1.96		3.90	1.89
	M2		3.43	1.60		3.95	1.77
	M3		2.89	1.47		2.88	1.54
11.Sleep patterns	M1		3.66	1.84		3.60	2.02
	M2		3.00	1.61		3.43	1.92
	M3		2.36	1.41		2.21	1.42
12.Crying	M1		3.74	1.97		3.85	1.75
	M2		3.11	1.61		3.66	1.89
	M3		2.52	1.48		2.57	1.50
13.Wet diapers	M1		2.58	1.85		2.69	1.61
	M2		1.98	1.37		2.16	1.64
	M3		1.39	0.99		1.29	0.55
14.Soiled diapers	M1		3.12	1.73		3.02	1.76
	M2		2.50	1.60		2.75	1.70
	M3		2.00	1.49		2.12	1.50
15.Normal development	M1		3.30	2.10		3.33	1.75
	M2		2.57	1.73		3.05	1.80
	M3		2.16	1.20		2.38	1.51
16.Infant safety	M1		2.76	2.14		2.83	1.79
	M2		1.93	1.31		2.27	1.81
	M3		1.61	1.02		1.71	1.29

Table E-9 Concerns about Personal and Family Adjustment
Repeated measures Anova for differences by group and
Questionnaire Administration

Variable	Between groups			Between admin.			Interaction		
	F	df	p (0.05)	F	df	p (0.05)	F	df	p (0.05)
1. Fitting baby into family	5.49	85,1	.021 *	12.39	170,2	.000 *	0.04	170,2	.961
2. Emotional changes	0.66	85,1	.418	7.89	170,2	.001 *	0.24	170,2	.790
3. Family planning	0.99	74,1	.324	0.18	148,2	.834	2.87	148,2	.060
4. Sexual intercourse	0.44	79,1	.511	8.38	158,2	.000 *	1.00	158,2	.370

* significant

Table E-10 Concerns about Personal & Family Adjustment
Means of Experimental & Control Groups at each Administration

		Experimental Group			Control Group		
Variable	Admin.	N	Mean	SD	N	Mean	SD
1. Fitting baby into family	M1	50	3.18	1.88	49	3.93	1.96
	M2	47	2.81	1.54	45	3.58	1.64
	M3	46	2.20	1.46	43	2.88	1.64
2.Emotional changes	M1		2.90	1.79		3.18	1.89
	M2		3.11	1.39		3.38	1.87
	M3		2.36	1.37		2.49	1.74
3.Family planning	M1		2.54	2.06		2.16	1.66
	M2		2.87	2.72		2.93	2.46
	M3		2.38	2.28		2.65	2.20
3.Sexual intercourse	M1		2.28	1.62		2.12	1.36
	M2		3.02	1.96		3.44	2.18
	M3		2.33	1.75		2.86	2.03

Table E-11 Information Sought for Self Concerns - Experimental group Frequencies and Chi square for differences between questionnaire administrations

	M1 (n=50)			M2 (n=47)			M3 (n=46)					
Variable	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	χ^2	df	p(0.05)
1.Breasts	48	2		31	15	1	18	24	4	43.66	4	.000 *
2.Perineum	40	7	3	27	16	4	10	29	7	33.42	4	.000 *
3.Vaginal flow	33	17		27	20		13	33		14.80	2	.001 *
4.Passing urine	21	29		17	30		8	38		7.16	2	.027 *
5.Bowel movement	19	31		21	26		11	35		4.55	2	.102
6.Hemorrhoids	11	6	33	13	17	17	8	21	17	16.60	4	.002 *
7.Changes in skin,hair	12	22	16	10	28	9	5	33	8	8.29	4	.081
8.Becoming tired	35	15		23	24		13	33		16.71	2	.000 *
9.Diet/ nutrition	39	11		24	23		17	29		17.05	2	.000 *
10.Postnatal exercises	37	13		31	16		16	30		16.71	2	.000 *
11.Getting figure back	28	22		23	24		13	33		7.95	2	.019 *

* significant

Table E-12 Information Sought for Self Concerns - Control group
Frequencies and Chi Square for differences between questionnaire administrations

	M1 (n=49)			M2 (n=45)			M3 (n=43)					
Variable	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A	χ^2	df	p(0.05)
1.Breasts	47	2		38	7		23	18	2	27.04	4	.000 *
2.Perineum	32	11	6	23	16	6	10	23	10	16.83	4	.002 *
3.Vaginal flow	31	18		25	20		14	29		9.18	2	.010 *
4.Passing urine	26	23		11	34		6	37		17.76	2	.000 *
5.Bowel movement	23	26		21	24		11	32		5.53	2	.063
6.Hemorrhoids	16	7	26	18	13	14	9	23	11	19.25	4	.001 *
7.Changes in skin,hair	13	19	17	7	24	14	5	29	9	8.21	4	.084
8.Becoming tired	32	17		18	27		11	32		15.19	2	.000 *
9.Diet/ nutrition	34	15		25	20		17	26		8.26	2	.016 *
10.Postnatal exercises	31	18		24	21		17	26		5.19	2	.075
11.Getting figure back	33	16		17	28		10	33		19.07	2	.000 *

* significant

Table E-13 Information Sought for Baby Concerns-Experimental group Frequencies and Chi Square for differences between questionnaire administrations

	M1 (n=50)			M2 (n=47)			M3 (n=46)					
Variable	Yes	No	NA	Yes	No	NA	Yes	No	NA	χ^2	df	p(0.05)
1.Bathing	45	5		27	20		12	34		40.43	2	.000 *
2.Care cord	47	3		29	16	2	8	33	5	58.46	4	.000 *
3.Care of foreskin	10	3	37	10	8	29	6	14	26	10.41	4	.034 *
4.Care of circumcision	15	0	35	10	3	34	4	10	32	18.45	4	.001 *
5.Breastfeeding	48	0	2	31	10	6	16	21	9	41.48	4	.000 *
6.Bottlefeeding	3	3	44	11	1	35	10	11	25	21.12	4	.000 *
7.Weight gain	25	25		33	14		25	21		4.44	2	.108
8.Skin	27	23		21	13	13	21	18	7	16.05	4	.003 *
9.Jaundice	11	9	30	11	15	21	7	14	25	4.11	4	.391
10.Behavior	33	17		34	13		28	18		1.38	2	.502
11.Sleep patterns	38	12		26	21		17	29		14.92	2	.001*
12.Crying	27	23		23	24		13	33		7.12	2	.028 *
13.Wet diapers	40	10		24	23		10	36		32.58	2	.000 *
14.Soiled diapers	36	14		29	17	1	16	30		16.69	4	.002 *
15.Normal development	32	18		31	16		25	21		1.52	2	.676
16.Infant safety	44	6		26	21		14	32		33.10	2	.000 *

*** significant**

Table E-14 Information Sought for Baby Concerns - Control group
Frequencies and Chi Square for differences between questionnaire administrations

	M1 (n=49)			M2 (n=45)			M3 (n=43)					
Variable	Yes	No	NA	Yes	No	NA	Yes	No	NA	χ^2	df	p(0.05)
1.Bathing	45	4		32	13		18	25		27.01	2	.000 *
2.Care cord	49	0		30	15		13	25	5	54.44	4	.000 *
3.Care of foreskin	7	8	34	8	8	29	7	9	27	0.62	4	.961
4.Care of circumcision	14	0	35	9	5	31	5	8	30	11.79	4	.019 *
5.Breastfeeding	46	0	3	36	5	4	23	14	6	21.12	4	.000 *
6.Bottlefeeding	7	1	41	13	2	30	12	8	23	14.67	4	.005 *
7.Weight gain	24	25		32	13		23	20		5.15	2	.076
8.Skin	29	20		27	13	5	23	15	5	6.72	4	.151
9.Jaundice	12	4	33	18	11	16	7	15	21	17.13	4	.002 *
10.Behavior	30	19		31	13	1	22	21		5.54	4	.244
11.Sleep patterns	33	16		31	14		18	25		8.47	2	.015 *
12.Crying	26	23		22	23		14	29		4.24	2	.120
13.Wet diapers	40	9		28	17		14	29		23.11	2	.000 *
14.Soiled diapers	41	8		36	9		20	23		18.04	2	.000 *
15.Normal development	31	17	1	29	16		25	18		2.32	4	.676
16.Infant safety	46	3		27	18		23	20		21.06	2	.000 *

* significant

Table E-15 Information Sought for Personal & Family Adjustment Concerns Frequencies and Chi square within Experimental Group for differences between questionnaire administrations

Variable	M1(n=50) Yes	No	NA	M2 (n=47) Yes	No	NA	M3 (n=46) Yes	No	NA	χ^2	df	p(0.05)
1.Fitting baby into family	32	18		19	28		9	37		19.49	2	.000 *
2.Emotional changes	35	15		28	19		13	33		7.92	2	.000 *
3.Family planning	23	26	1	15	26	6	14	30	2	7.63	4	.106
4.Sexual intercourse	39	10	1	18	28	1	20	26		19.97	4	.000 *

* significant

Table E-16 Information Sought re Personal & Family Adjustment Concerns Frequencies and Chi square within Control Group for differences between questionnaire administrations

Variable	M1 (n=49) Yes	No	NA	M2 (n=45) Yes	No	NA	M3 (n=43) Yes	No	NA	χ^2	df	p(0.05)
1.Fitting baby into family	27	22		19	26		15	28		3.93	2	.140
2.Emotional changes	32	17		25	20		16	27		7.40	2	.025 *
3.Family planning	29	20		19	22	4	17	23	3	7.11	4	.130
4. Sexual intercourse	39	10		20	22	3	21	20	2	15.19	4	.004 *

* significant

Table E-17 Sources of Information for Self Concerns
Chi square for differences within experimental & control
groups between questionnaire administrations

		Experimental Group		Control Group	
Variables	Source	χ^2	p(0.05)	χ^2	p(0.05)
1.Breasts	Nurse	17.906	.000 *	11.194	.004 *
	Doctor	2.700	.259	3.536	.171
	Relative	1.882	.390	0.756	.685
	Friend	0.656	.720	2.310	.315
	Book	9.448	.009 *	17.301	.000 *
	Other	27.404	.000 *	10.830	.004 *
2.Perineum	Nurse	23.100	.000 *	18.475	.000 *
	Doctor	5.859	.053 *	2.450	.294
	Relative	6.259	.043 *	5.583	.061
	Friend	2.138	.343	0.321	.851
	Book	4.582	.101	0.789	.673
3.Vaginal flow	Nurse	14.220	.001*	12.568	.002 *
	Doctor	1.312	.519	0.051	.975
	Relative	1.957	.376	3.617	.164
	Friend	4.143	.126	0.174	.917
	Book	7.290	.026 *	3.699	.157
	Other	1.791	.408	4.951	.084
4.Passing urine	Nurse	8.651	.013 *	27.569	.000 *
	Doctor	0.339	.844	0.992	.609
	Relative	0.965	.617	0.564	.754
	Friend	0.550	.759	2.298	.317
	Book	3.492	.175	3.671	.159
	Other	0.550	.759	0.666	.717
5.Bowel movements	Nurse	0.843	.656	9.475	.009 *
	Doctor	1.898	.387	0.410	.815
	Relative	2.053	.358	0.564	.754
	Friend	4.277	.117	1.740	.419
	Book	3.310	.191	6.271	.043 *
	Other	0.550	.760	1.333	.513
6.Haemorrhoids	Nurse	3.591	.166	4.847	.088
	Doctor	0.016	.991	0.410	.815
	Relative	0.965	.617	3.291	.193
	Friend	0.004	.998	6.271	.043 *
	Book	7.419	.024 *	0.900	.638
	Other	0.004	.998	1.486	.476
7.Changes in skin, hair	Nurse	1.091	.580	0.934	.627
	Doctor	2.205	.332	4.164	.125
	Relative	1.873	.392	0.556	.757
	Friend	0.601	.740	1.016	.602
	Book	1.817	.403	0.205	.902
	Other	1.428	.490	1.016	.602

Table E-17 (Cont.) Sources of Information for Self Concerns
Chi square for differences within experimental & control groups
between questionnaire administrations

Variable	Source	Experimental Group χ^2	 p(0.05)	Control Group χ^2	 p(0.05)
8.Becoming tired	Nurse	6.224	.044 *	3.777	.151
	Doctor	1.622	.444	1.859	.395
	Relative	2.083	.353	1.251	.535
	Friend	3.135	.209	0.047	.977
	Book	12.930	.002 *	10.742	.005 *
	Other	10.326	.004 *	11.728	.003 *
9.Diet/Nutrition	Nurse	2.408	.300	2.495	.287
	Doctor	0.140	.932	1.890	.389
	Relative	0.543	.762	4.050	.132
	Friend	0.825	.662	3.283	.194
	Book	11.695	.003 *	9.802	.007 *
	Other	18.927	.000 *	19.358	.000 *
10.Postnatal exercises	Nurse	6.154	.046 *	7.137	.028 *
	Doctor	0.601	.740	0.300	.861
	Relative	1.873	.392	1.006	.605
	Friend	3.244	.197	5.920	.052 *
	Other	12.448	.002 *	11.052	.004 *
11.Getting figure back	Nurse	3.727	.155	2.790	.248
	Doctor	-	-	1.644	.440
	Relative	4.933	.085	2.351	.309
	Friend	1.306	.521	9.425	.009 *
	Book	4.882	.087	5.285	.071
	Other	8.153	.017 *	6.089	.048 *

df = 2
* significant

Table E-18 Sources of Information for Baby Concerns
Chi square for differences within experimental & contol
groups between questionnaire administrations

Variable	Source	Experimental Group		Control Group	
		χ^2	p(0.05)	χ^2	p(0.05)
1. Bathing	Nurse	40.345	.000 *	32.400	.000 *
	Doctor	3.244	.197	3.499	.174
	Relative	6.786	.034 *	5.760	.056 *
	Friend	2.053	.358	7.745	.021 *
	Book	3.034	.219	7.904	.019 *
	Other	1.459	.482	3.386	.184
2. Care of cord	Nurse	57.970	.000 *	48.810	.000 *
	Doctor	5.234	.073	9.973	.007 *
	Relative	3.592	.166	1.775	.412
	Friend	3.727	.155	9.603	.008 *
	Book	14.941	.000 *	5.183	.075
	Other	0.078	.000 *	1.644	.440
3. Care of foreskin	Nurse	0.215	.898	0.668	.716
	Doctor	3.071	.215	3.361	.186
	Relative	1.091	.580	-	-
	Friend	-	-	2.060	.357
	Book	2.504	.286	0.039	.981
	Other	3.288	.193	1.782	.410
4. Care of circumcision	Nurse	7.202	.027 *	5.377	.070
	Doctor	1.207	.547	0.382	.826
	Relative	4.143	.125	0.556	.757
	Friend	2.124	.346	0.934	.627
	Book	0.694	.707	0.934	.627
	Other	0.008	.996	1.809	.405
5. Breastfeeding	Nurse	32.719	.000 *	25.128	.000 *
	Doctor	2.083	.352	1.859	.395
	Relative	1.778	.411	0.771	.680
	Friend	1.342	.511	2.513	.285
	Book	14.917	.001 *	9.520	.009 *
	Other	16.975	.000 *	15.968	.000 *
6. Bottlefeeding	Nurse	2.574	.276	0.370	.831
	Doctor	5.312	.070	5.494	.064
	Relative	2.055	.358	0.009	.996
	Friend	11.948	.003 *	2.296	.317
	Book	3.470	.176	3.844	.146
	Other	2.205	.332	0.666	.717
7. Weight gain	Nurse	0.008	.996	3.401	.183
	Doctor	18.833	.000 *	6.773	.034 *
	Relative	0.250	.882	0.268	.875
	Friend	0.012	.994	2.120	.346
	Book	0.185	.911	4.445	.108
	Other	1.144	.564	6.440	.040 *

Table E-18 (Cont.) Sources of Information for Baby Concerns
Chi square for differences within experimental & control
groups between questionnaire administrations

Variable	Source	Experimental Group χ^2	 p(0.05)	Control Group χ^2	 p(0.05)
8. Skin	Nurse	1.089	.580	3.852	.146
	Doctor	3.107	.211	1.849	.397
	Relative	1.621	.445	3.334	.189
	Friend	3.733	.155	1.243	.537
	Book	2.569	.277	2.739	.254
	Other	0.121	.942	5.256	.072
9. Jaundice	Nurse	2.605	.272	10.295	.006 *
	Doctor	0.467	.792	0.653	.721
	Relative	1.873	.392	2.059	.357
	Friend	1.957	.376	2.059	.357
	Book	0.739	.691	2.036	.361
	Other	0.601	.740	0.934	.627
10. Behavior	Nurse	6.866	.032 *	2.163	.339
	Doctor	10.846	.004 *	2.300	.223
	Relative	1.425	.490	0.269	.874
	Friend	1.153	.562	0.960	.619
	Book	1.560	.458	0.993	.609
	Other	1.164	.559	6.396	.041 *
11. Sleep patterns	Nurse	10.473	.005 *	10.825	.004 *
	Doctor	1.062	.588	0.218	.897
	Relative	0.482	.786	0.560	.756
	Friend	0.180	.914	4.282	.118
	Book	5.164	.076	3.485	.175
	Other	9.140	.101	3.119	.210
12. Crying	Nurse	8.779	.012 *	6.948	.031 *
	Doctor	5.302	.071	2.704	.259
	Relative	1.680	.432	0.793	.673
	Friend	0.897	.639	5.721	.057 *
	Book	3.439	.179	6.103	.047 *
	Other	3.301	.192	6.482	.039 *
13. Wet diapers	Nurse	7.378	.025 *	3.761	.152
	Doctor	4.001	.135	1.089	.580
	Relative	3.016	.221	7.092	.029 *
	Friend	1.808	.405	7.281	.026 *
	Book	12.218	.002 *	2.228	.328
	Other	14.813	.000 *	17.790	.000 *
14. Soiled diapers	Nurse	6.489	.039 *	9.081	.011 *
	Doctor	3.221	.200	5.689	.058
	Relative	0.871	.647	4.017	.134
	Friend	1.791	.408	2.336	.311
	Book	7.306	.026 *	7.536	.023 *
	Other	15.010	.000 *	8.959	.011 *

Table E-18 (Cont.) Sources of Information for Baby Concerns
Chi square for differences within experimental & control
groups between questionnaire administrations

Variable	Source	Experimental Group χ^2	Experimental Group p(0.05)	Control Group χ^2	Control Group p(0.05)
15. Normal development	Nurse	1.473	.479	0.743	.689
	Doctor	7.786	.020 *	4.713	.094
	Relative	0.026	.987	2.097	.350
	Friend	2.059	.357	0.597	.742
	Book	1.517	.468	1.699	.428
	Other	4.212	.121	3.829	.147
16. Infant safety	Nurse	2.430	.297	2.148	.342
	Doctor	2.205	.332	1.006	.605
	Relative	1.684	.431	7.438	.024 *
	Friend	7.927	.019 *	9.644	.008 *
	Book	24.181	.000 *	5.292	.071
	Other	28.522	.000 *	19.959	.000 *

* significant
df = 2

Table E-19 Sources of Information for Personal & Family Adjustment Concerns

Chi square for differences within groups between questionnaire administrations

		Experimental Group		Control Group	
Variable	Source	χ^2	p(0.05)	χ^2	p(0.05)
1.Fitting baby into family	Nurse	3.139	.208	7.547	.023 *
	Doctor	-	-	0.364	.833
	Relative	1.336	.513	1.997	.368
	Friend	1.525	.466	0.128	.938
	Book	15.266	.000 *	11.593	.000 *
	Other	17.006	.000 *	0.875	.646
2. Emotional changes	Nurse	11.691	.003 *	8.398	.015 *
	Doctor	3.305	.192	4.066	.131
	Relative	1.418	.492	1.811	.404
	Friend	1.701	.427	2.645	.267
	Book	15.686	.000 *	5.726	.057 *
	Other	20.558	.000 *	7.484	.024 *
3. Family planning	Nurse	4.143	.126	3.161	.206
	Doctor	7.938	.018 *	0.685	.710
	Relative	2.124	.346	0.163	.922
	Friend	2.057	.358	1.503	.472
	Book	6.412	.041 *	3.760	.153
	Other	5.107	.077	5.439	.066
4.Sexual intercourse	Nurse	2.369	.306	2.148	.342
	Doctor	5.809	.055 *	3.709	.157
	Relative	3.305	.192	1.830	.401
	Friend	0.908	.635	3.645	.162
	Book	11.065	.004 *	9.141	.010 *
	Other	21.290	.000 *	12.668	.002 *

df = 2

* significant

Table E-20 Overall Maternal Self-Confidence
Means of Scale Items for Experimental & Control groups at each questionnaire administration

Item	Admin.	Experimental group			Control group		
		Mean	SD	Range	Mean	SD	Range
1.Able to be a good mother	M1	5.22	1.08	3 - 7	5.02	1.18	3 - 7
	M2	5.15	1.20	2 - 7	5.18	1.42	1 - 7
	M3	5.76	1.14	3 - 7	5.81	1.03	3 - 7
2.Regulate demands of husband,baby,& housework	M1	4.36	1.40	1 - 7	3.84	1.33	1 - 7
	M2	4.32	1.20	2 - 7	4.00	1.33	1 - 7
	M3	5.04	1.21	2 - 7	4.77	1.34	1 - 7
3.Able to handle most problems that arise	M1	4.94	1.20	2 - 7	4.61	1.19	1 - 7
	M2	4.87	1.30	2 - 7	4.67	1.26	1 - 7
	M3	5.46	1.19	2 - 7	5.56	1.08	1 - 7
4.Enjoy being a mother	M1	6.60	0.76	4 - 7	6.20	1.10	2 - 7
	M2	6.00	1.25	1 - 7	6.02	1.31	2 - 7
	M3	6.54	0.59	5 - 7	6.51	0.63	5 - 7
5.No difficulty caring for baby	M1	5.04	1.59	1 - 7	4.67	1.51	1 - 7
	M2	5.19	1.42	1 - 7	5.16	1.45	1 - 7
	M3	5.98	1.06	2 - 7	5.79	1.21	3 - 7
6.Understand needs when baby cries	M1	4.46	1.64	1 - 7	4.12	1.51	1 - 7
	M2	4.85	1.44	1 - 7	4.69	1.53	1 - 7
	M3	5.50	1.09	3 - 7	5.33	1.15	2 - 7
7.Adjusting easily to motherhood	M1	5.10	1.34	2 - 7	4.67	1.53	1 - 7
	M2	5.09	1.28	1 - 7	4.91	1.44	1 - 7
	M3	5.63	1.27	2 - 7	5.65	1.07	2 - 7
8.Meet all demands of caring for child	M1	5.14	1.39	3 - 7	5.00	1.51	1 - 7
	M2	5.19	1.30	2 - 7	5.11	1.47	1 - 7
	M3	5.78	1.09	2 - 7	5.72	1.14	2 - 7
9.No problems making decisions about baby care	M1	4.82	1.40	2 - 7	4.79	1.65	1 - 7
	M2	5.11	1.22	2 - 7	5.27	1.34	1 - 7
	M3	5.78	1.07	3 - 7	5.74	1.14	2 - 7
10.Mothering abilities better than most people's	M1	4.14	1.16	2 - 7	3.96	1.26	2 - 7
	M2	4.37	1.27	1 - 7	4.09	1.68	1 - 7
	M3	5.04	1.09	3 - 7	4.90	1.21	2 - 7
11.Able to help or advise new mothers	M1	3.26	1.61	1 - 7	3.10	1.69	1 - 7
	M2	4.02	1.38	1 - 7	3.82	1.56	1 - 7
	M3	5.07	1.08	3 - 7	4.79	1.23	1 - 7

Table E-21 Overall Maternal Self-Confidence
Repeated Measures Anova for differences by group and questionnaire administration

Item	Between groups			Between Administrations			Interaction		
	F	df	p (0.05)	F	df	p (0.05)	F	df	p (0.05)
1. Ability to be good mother	0.10	85,1	.754	13.35	170,2	.000 *	0.53	170,2	.589
2. Regulate demands of husband, baby, housework	2.33	85.1	.130	20.35	170,2	.000 *	0.79	170,2	.457
3. Able to handle most problems	0.22	85,1	.644	17.27	170,2	.000 *	1.15	170,2	.319
4. Enjoy being a mother	0.95	85,1	.332	6.37	170,2	.002 *	2.89	170,2	.058
5. No difficulty caring for baby	1.24	85,1	.269	21.78	170,2	.000 *	0.70	170,2	.499
6. Understand what baby needs when cries	1.18	85,1	.281	23.82	170,2	.000 *	0.09	170,2	.917
7. Adjusting easily to	0.76	85,1	.387	15.44	170,2	.000 *	1.24	170,2	.293
8. Can meet all demands of caring for child	0.17	85,1	.679	13.89	170,2	.000 *	0.03	170,2	.967
9. No problems making decisions about baby care	0.04	85,1	.835	27.35	170,2	.000 *	0.24	170,2	.785
10. Feel mothering abilities better than most peoples	1.28	84,1	.262	27.85	168,2	.000 *	0.21	168,2	.808
11. Able to help/advise other new mothers	1.13	85,1	.292	56.92	170,2	.000 *	0.07	170,2	.929

*significant

Table E-22 Confidence in Infant Care Ability
Means of Scale Items for Experimental & Control Groups at each administration

Item	Admin.	Experimental group			Control group		
		Mean	SD	Range	Mean	SD	Range
1. Bathing baby	M1	4.92	1.58	2 - 7	4.69	1.45	2 - 7
	M2	5.75	0.97	4 - 7	5.33	1.49	1 - 7
	M3	6.26	1.00	3 - 7	6.23	0.97	3 - 7
2. Care of cord	M1	5.52	1.33	2 - 7	5.51	1.21	3 - 7
	M2	6.20	1.04	3 - 7	6.11	1.15	2 - 7
	M3	6.70	0.59	5 - 7	6.72	0.63	5 - 7
3. Breastfeeding	M1	4.52	1.30	1 - 7	4.20	1.41	1 - 7
	M2	5.23	1.23	3 - 7	4.82	1.37	1 - 7
	M3	5.86	1.17	2 - 7	5.69	1.12	3 - 7
4. Bottlefeeding	M1	4.83	2.40	2 - 7	5.56	1.33	3 - 7
	M2	5.00	1.54	2 - 7	5.00	1.56	1 - 7
	M3	5.89	1.41	2 - 7	5.95	1.18	3 - 7
5. Weight gain	M1	4.12	1.55	1 - 7	4.39	1.47	1 - 7
	M2	5.28	1.23	2 - 7	5.13	1.39	2 - 7
	M3	6.24	1.20	2 - 7	5.86	1.10	3 - 7
6. Behavior	M1	3.98	1.41	1 - 7	3.98	1.45	1 - 7
	M2	4.70	1.28	2 - 7	4.16	1.11	1 - 6
	M3	5.54	1.19	3 - 7	5.19	1.14	2 - 7
7. Sleep patterns	M1	4.52	1.42	1 - 7	4.34	1.38	2 - 7
	M2	5.15	1.37	1 - 7	4.73	1.36	1 - 7
	M3	5.78	0.99	3 - 7	5.49	1.24	2 - 7
8. Crying	M1	4.26	1.31	1 - 7	4.00	1.54	1 - 7
	M2	4.87	1.19	3 - 7	4.49	1.36	1 - 6
	M3	5.52	1.05	4 - 7	5.35	1.17	2 - 7
9. Wet diapers	M1	4.76	1.52	1 - 7	4.65	1.44	2 - 7
	M2	5.77	0.96	4 - 7	5.51	1.24	1 - 7
	M3	6.24	0.92	4 - 7	6.16	0.81	4 - 7
10.Soiled diapers	M1	4.60	1.63	1 - 7	3.96	1.49	1 - 7
	M2	5.47	1.18	3 - 7	5.00	1.17	1 - 7
	M3	6.04	0.89	4 - 7	5.72	1.14	3 - 7
11.Infant development	M1	4.52	1.54	1 - 7	4.16	1.43	1 - 7
	M2	5.09	1.28	2 - 7	4.93	1.16	1 - 7
	M3	5.78	1.05	3 - 7	5.61	1.00	3 - 7
12.Infant safety	M1	5.56	1.25	2 - 7	5.59	1.31	3 - 7
	M2	5.98	1.13	3 - 7	6.02	1.25	1 - 7
	M3	6.35	0.97	3 - 7	6.40	0.66	5 - 7

Table E-23 Confidence in Infant Care
Repeated measures Anova for differences by group and questionnaire administration

Item	Between groups			Between administrations			Interaction		
	F	df	p (0.05)	F	df	p (0.05)	F	df	p (0.05)
1. Bathing baby	0.74	85,1	.393	39.78	170,2	.000 *	0.55	170,2	.578
2. Care of cord	0.32	61,1	.572	27.86	122,2	.000 *	0.11	122,2	.899
3. Breastfeeding	1.13	65,1	.291	36.47	130,2	.000 *	0.08	130,2	.919
4. Bottlefeeding	0.05	8,1	.830	3.16	16,2	.070	0.77	16,2	.477
5. Knowledge of baby's weight gain	0.22	85,1	.637	54.17	170,2	.000 *	2.06	170,2	.131
6. Knowledge of baby behavior	2.21	85,1	.141	39.78	170,2	.000 *	1.50	170,2	.225
7. Knowledge of baby's sleep patterns	2.08	85,1	.153	28.33	170,2	.000 *	0.17	170,2	.843
8. Knowing what cry means	0.86	85,1	.356	38.69	170,2	.000 *	0.38	170,2	.683
9. Knowledge about wet diapers	0.36	85,1	.553	48.29	170,2	.000 *	0.52	170,2	.594
10. Knowledge about soiled diapers	5.35	85,1	.023 *	47.53	170,2	.000 *	0.23	170,2	.798
11. Knowedge about normal development	0.80	85,1	.375	42.40	170,2	.000 *	0.08	170,2	.921
12. Infant safety	0.03	85,1	.868	18.18	170,2	.000 *	0.02	170,2	.978

*significant

Table E-24 Telephone calls - Overall Frequency of concerns

Variable	n	No concern	Major Concern	Minor Concern
Self concerns				
Breasts	329	169	37	123
Perineum	303	160	16	126
Vaginal flow	328	313	3	12
Passing urine	329	313	1	15
Bowel movements	323	312	1	10
Hemorrhoids	151	92	14	45
Rest/Sleep	329	262	6	61
Fluids/Nutrition	329	321	0	8
Postnatal exercises	323	323	0	0
Baby concerns				
Bathing	327	327	0	0
Care of cord	328	323	0	5
Circumcision	87	86	0	1
Breastfeeding	308	251	12	44
Bottlefeeding	32	30	1	1
Weight gain	324	323	1	0
Skin	325	312	1	12
Jaundice	219	159	3	57
Behavior	329	325	1	3
Sleep patterns	329	302	5	22
Crying	329	306	1	22
Voiding	329	320	1	8
Bowel movements	328	315	2	11
Development	329	329	0	0
Safety	328	328	0	0
Adjustment concerns				
Family adjustment	329	256	5	68
Emotions	329	262	6	61
Total # concerns		6819	117	715

Table E-25 Daily telephone calls - Total concerns by day

Variable	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Self concerns							
Breasts	92	88	90	75	71	58	52
Perineum	84	77	75	69	58	52	48
Vaginal flow	49	45	51	51	50	52	48
Passing urine	50	48	52	51	47	49	49
Bowel movements	45	44	49	49	47	52	49
Hemorrhoids	41	37	35	29	30	26	26
Rest/Sleep	63	63	55	62	54	55	50
Fluids/Nutrition	49	45	49	48	48	50	48
Postnatal exercises	46	42	48	47	47	47	46
Baby concerns							
Bathing	46	44	48	48	47	48	46
Care of cord	48	44	48	48	48	50	47
Circumcision	15	12	12	13	13	12	11
Breastfeeding	60	55	55	56	55	48	49
Bottlefeeding	10	4	2	4	2	6	7
Weight gain	46	42	47	48	47	50	46
Skin	48	45	48	49	47	52	50
Jaundice	54	51	43	42	34	29	29
Behavior	49	44	48	50	47	50	46
Sleep patterns	56	53	49	54	49	52	48
Crying	54	50	50	51	50	51	47
Voiding	55	45	49	48	47	49	46
Bowel movements	51	44	51	51	51	49	46
Development	48	44	48	48	47	48	46
Safety	48	43	48	48	47	48	46
Adjustment concerns							
Family adjustment	71	66	63	56	51	53	47
Emotions	63	60	58	59	54	56	52

Table E-26 Daily telephone calls - Frequency of concerns by day
Major concerns

Variable	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Self concerns							
Breasts	10	11	6	4	4	1	1
Perineum	3	4	5	4	0	0	0
Vaginal flow	0	0	1	0	1	1	0
Passing urine	0	1	0	0	0	0	0
Bowel movements	0	0	0	0	0	1	0
Hemorrhoids	6	3	2	2	1	0	0
Rest/sleep	2	3	0	1	0	0	0
Fluids/Nutrition	0	0	0	0	0	0	0
Postnatal exercises	0	0	0	0	0	0	0
Baby concerns							
Bathing	0	0	0	0	0	0	0
Care of cord	0	0	0	0	0	0	0
Circumcisdion	0	0	0	0	0	0	0
Breastfeeding	3	3	1	3	2	0	0
Bottlefeeding	0	0	0	0	0	1	0
Weight gain	0	0	0	0	0	1	0
Skin	0	0	0	0	0	1	0
Jaundice	1	1	0	1	0	0	0
Behavior	0	0	0	0	0	1	0
Sleep patterns	2	2	0	0	0	1	0
Crying	0	0	0	0	0	1	0
Voiding	1	0	0	0	0	0	0
Bowel movements	1	0	0	0	1	0	0
Development	0	0	0	0	0	0	0
Safety	0	0	0	0	0	0	0
Adjustment concerns							
Family adjustment	1	3	1	0	0	0	0
Emotions	1	2	1	1	0	0	1
Total # of concerns	31	33	17	16	9	9	2

Table E-27 Daily telephone calls - Frequency of concerns by day
Minor concerns

Variable	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Self concerns							
Breasts	24	22	30	19	16	8	4
Perineum	30	28	23	17	14	8	6
Vaginal flow	1	2	1	3	1	2	2
Passing urine	2	2	4	3	0	1	3
Bowel movements	2	1	1	1	0	2	3
Hemorrhoids	6	9	8	5	7	5	5
Rest/sleep	11	13	7	12	7	7	4
Fluids/Nutrition	1	1	1	0	1	2	2
Postnatal exercises	0	0	0	0	0	0	0
Baby concerns							
Bathing	0	0	0	0	0	0	0
Care of cord	1	0	0	0	1	2	1
Circumcision	1	0	0	0	0	0	0
Breastfeeding	11	8	7	5	6	3	4
Bottlefeeding	1	0	0	0	0	0	0
Weight gain	0	0	0	0	0	0	0
Skin	1	1	1	1	1	3	4
Jaundice	15	15	10	8	4	3	2
Behavior	1	0	0	2	0	0	0
Sleep patterns	4	5	1	6	2	2	2
Crying	6	6	2	3	3	1	1
Voiding	5	1	1	0	0	1	0
Bowel movements	2	0	3	3	2	1	0
Development	0	0	0	0	0	0	0
Safety	0	0	0	0	0	0	0
Adjustment concerns							
Family adjustment	21	16	13	8	4	5	1
Emotions	13	12	8	9	7	8	4
Total # of concerns	159	142	121	105	76	64	48

APPENDIX F

FIGURES

Figure F-1

High Self Concerns
Experimental Group

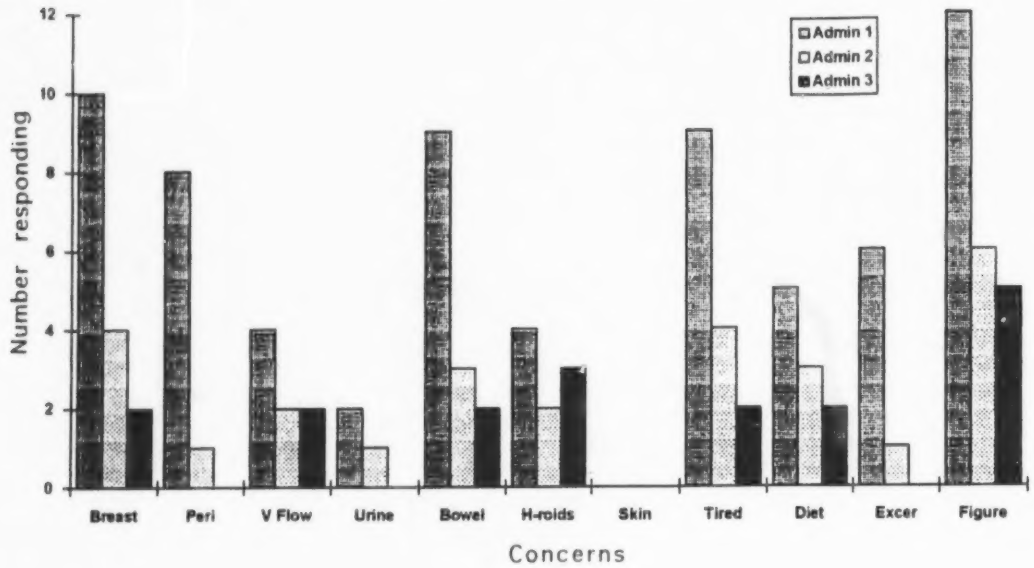

Figure F-2

High Self Concerns
Control Group

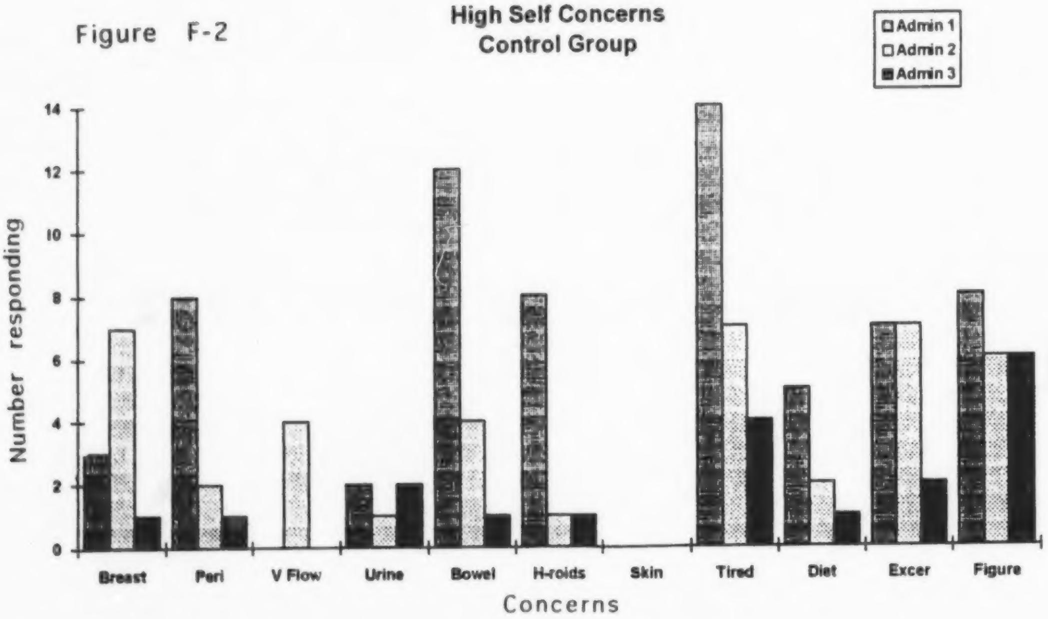

Figure F-3

Low Self Concerns
Experimental Group

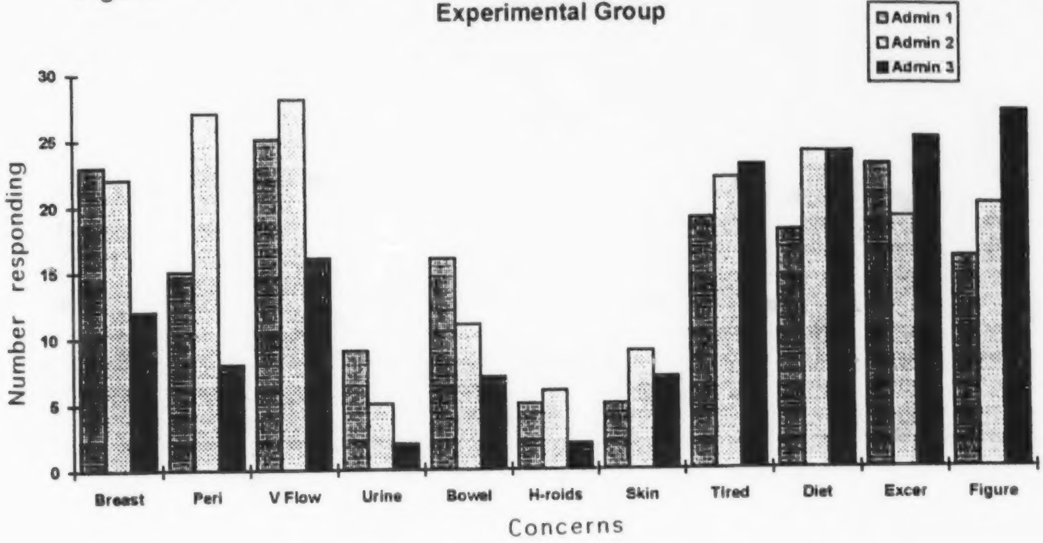

Figure F-4

Low Self Concerns
Control Group

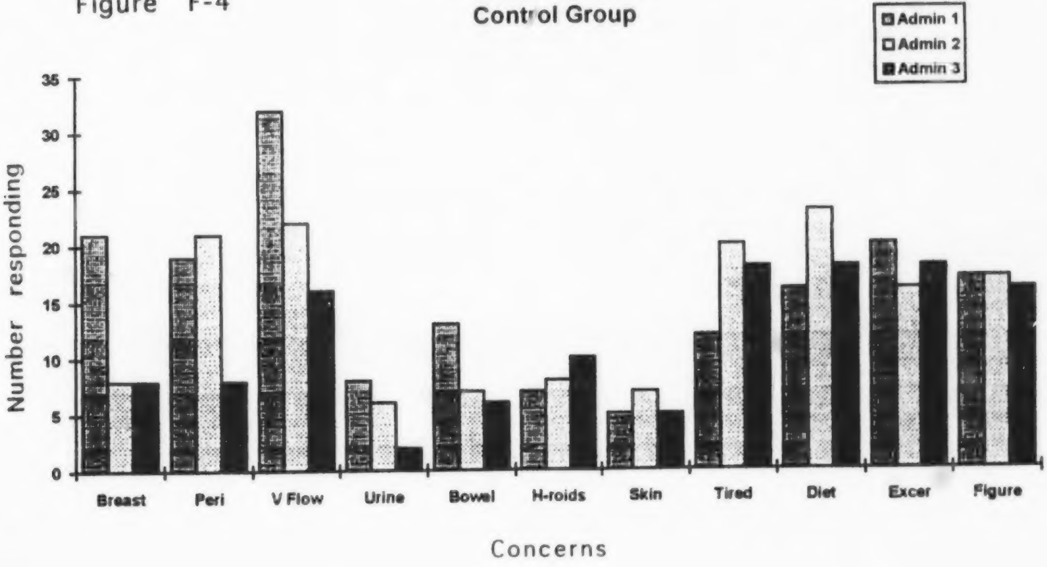

Figure F-5

High Baby Concerns
Experimental Group

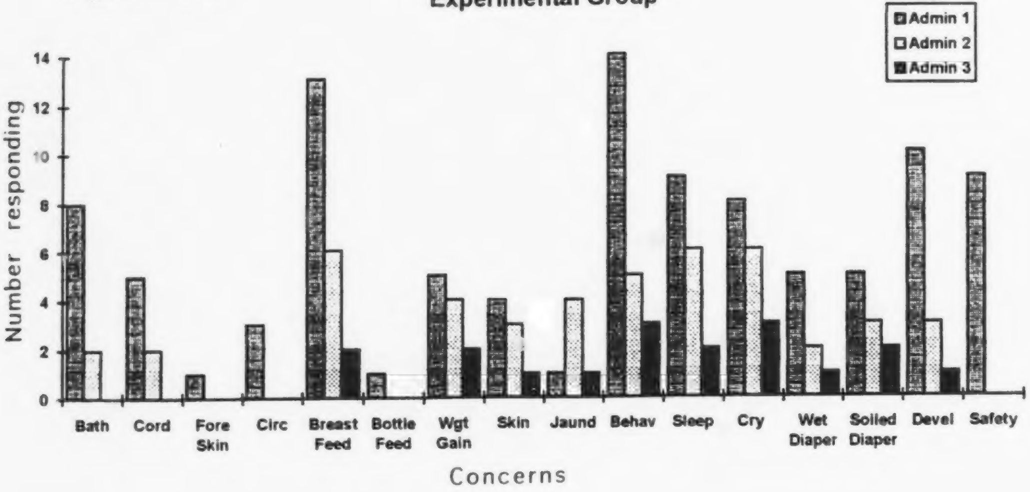

Figure F-6

High Baby Concerns
Control Group

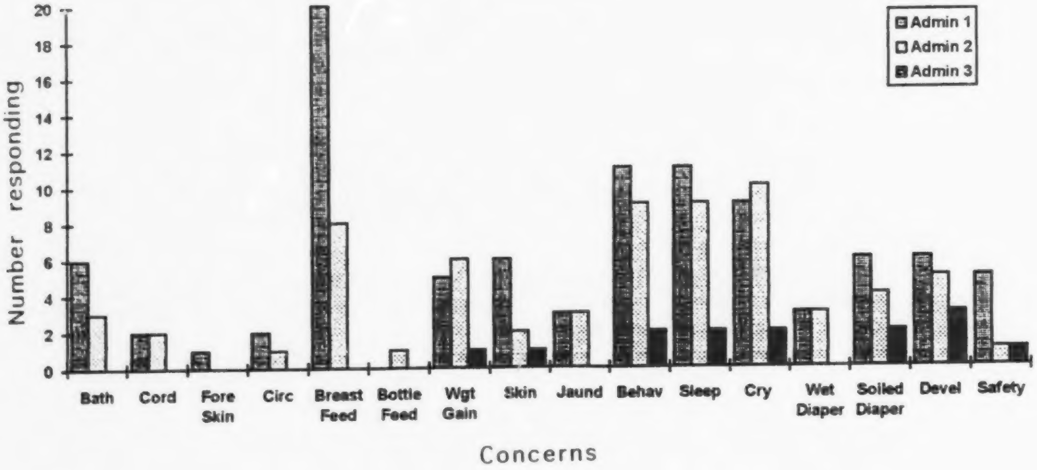

Figure F-7

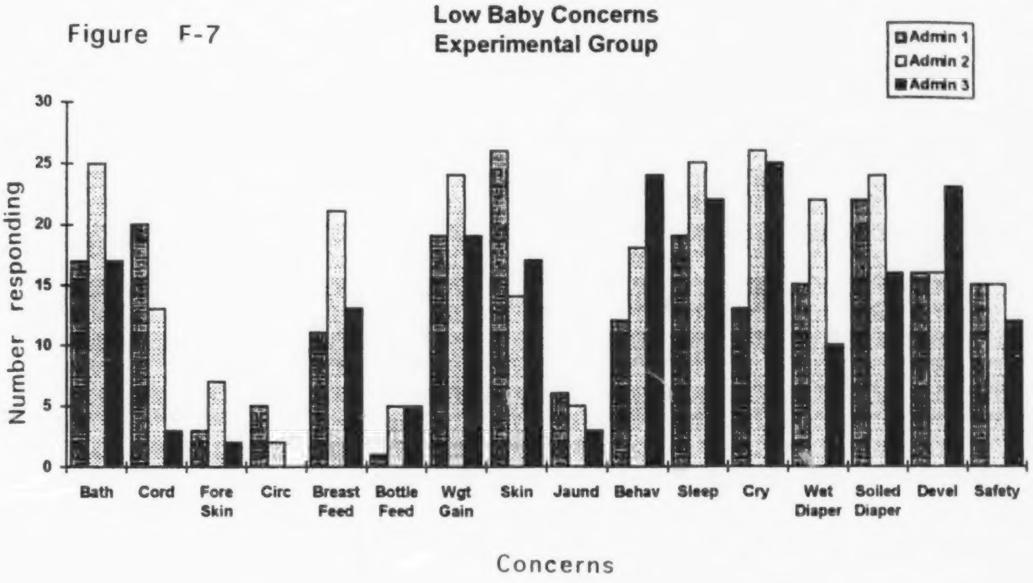

Figure F-8

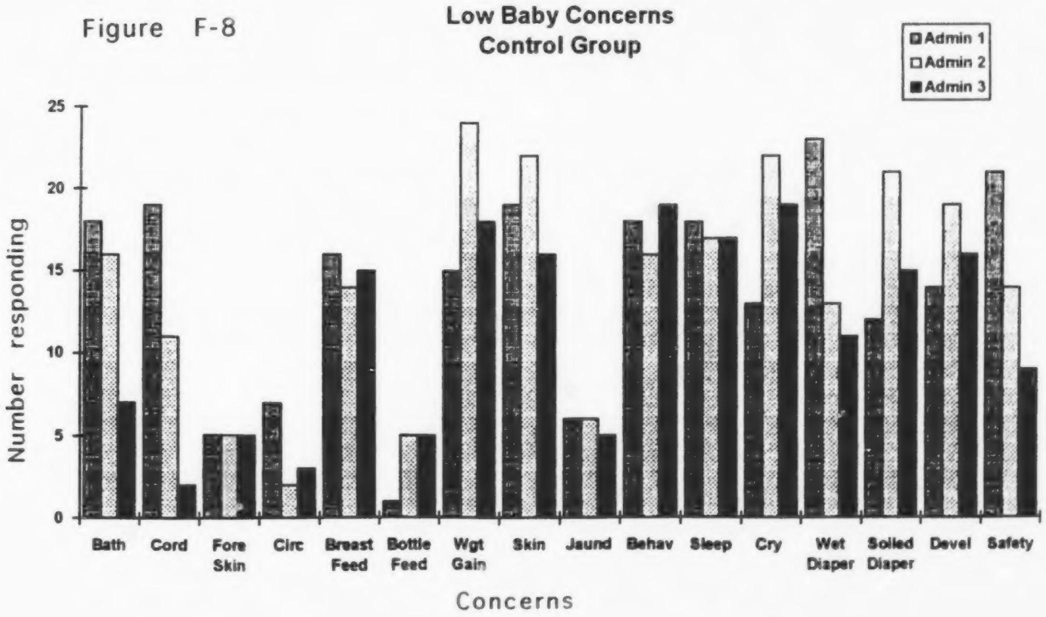

Figure F-9

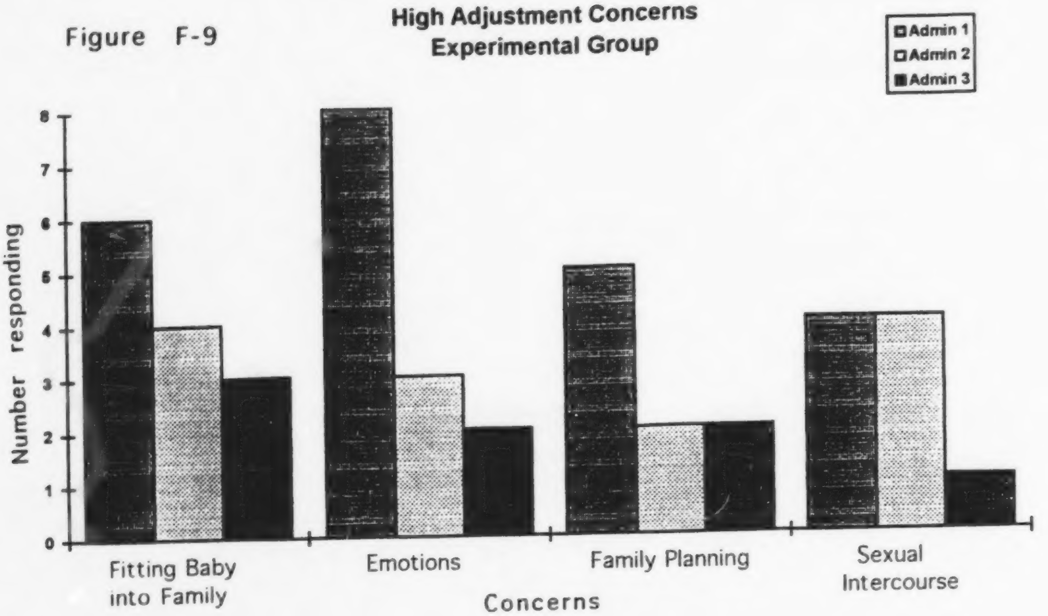
High Adjustment Concerns
Experimental Group

Figure F-10

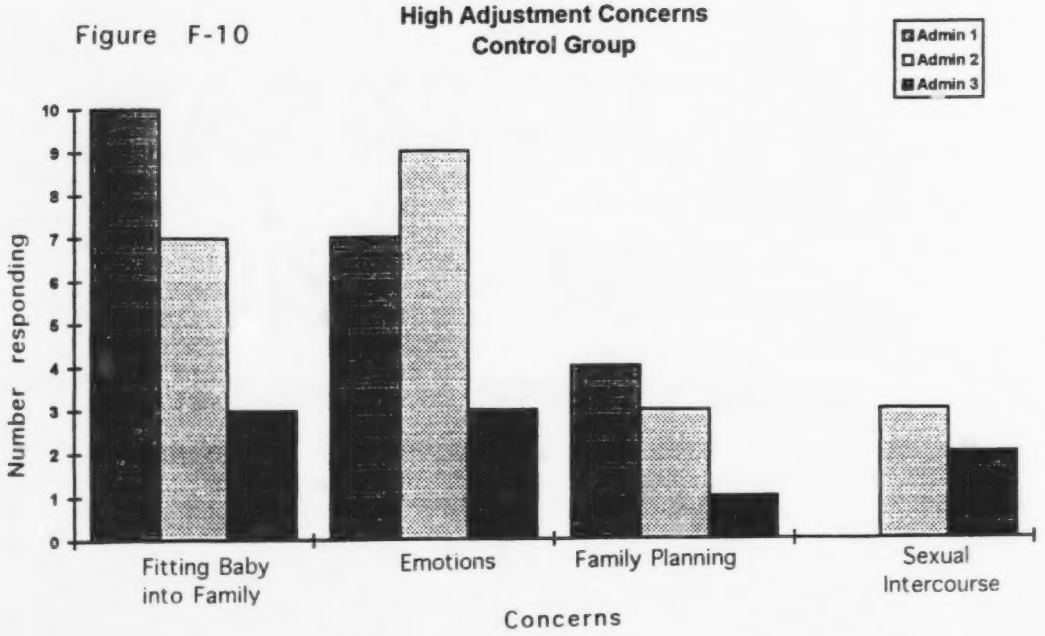
High Adjustment Concerns
Control Group

Figure F-11

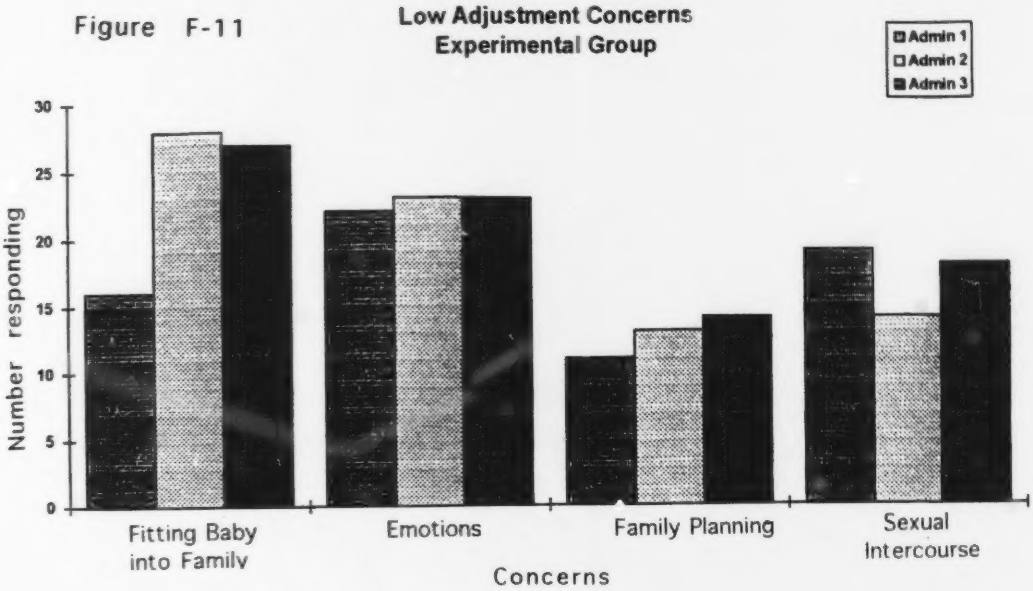

Figure F-12